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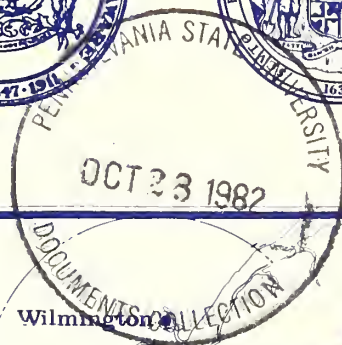
# Report on Surveys of **DELAWARE** **MARYLAND** Boundaries

Buford K. Meade

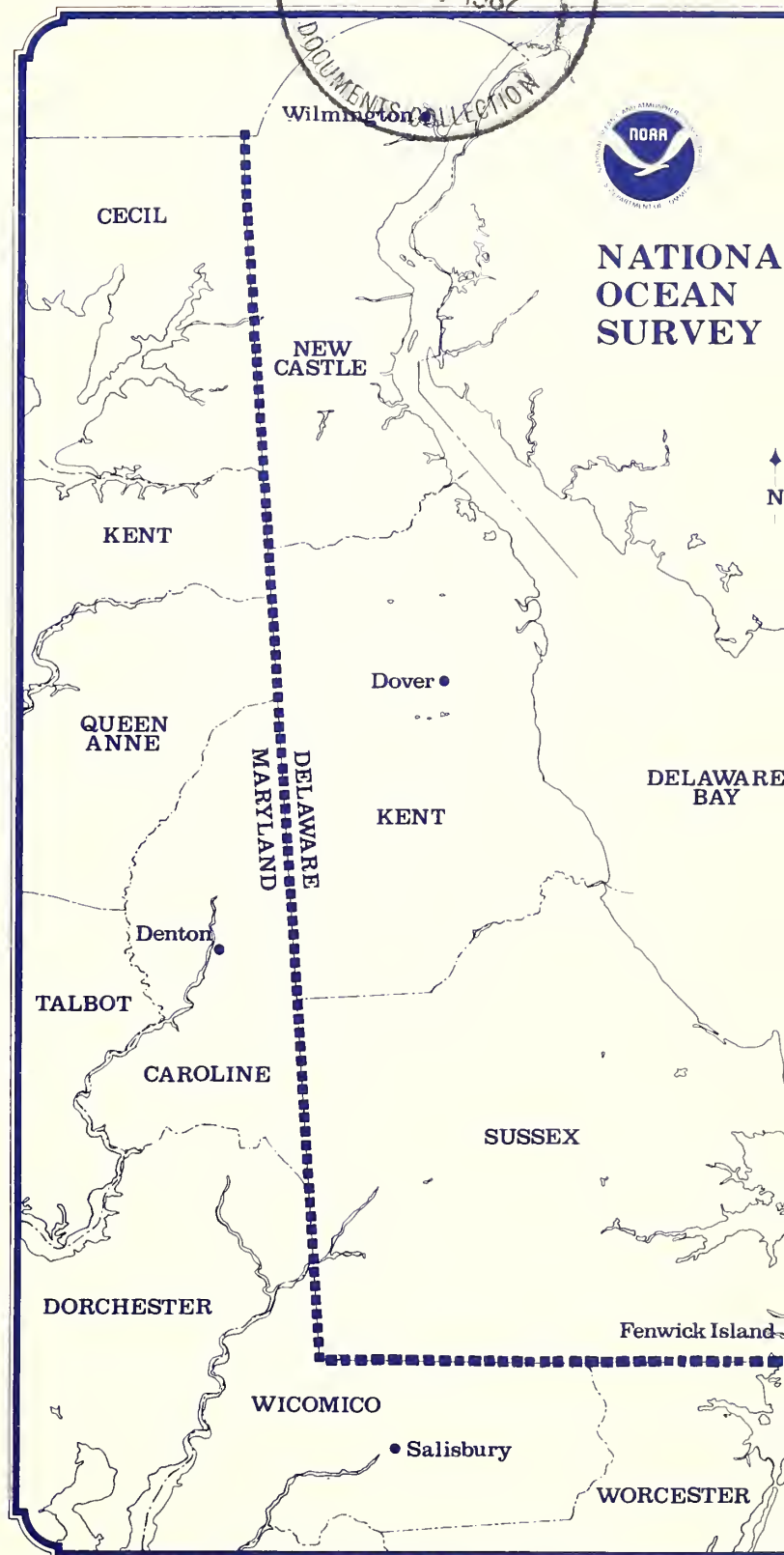
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U. S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey



NATIONAL  
OCEAN  
SURVEY





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# **Report on Surveys of DELAWARE MARYLAND Boundaries**

In Cooperation with the States of  
Delaware and Maryland

**Buford K. Meade ( Retired )**

National Geodetic Survey  
Rockville, Md. 20852

Printed in 1982



**U. S. DEPARTMENT OF COMMERCE**

Malcolm Baldrige, Secretary

**National Oceanic and Atmospheric Administration**

John V. Byrne, Administrator

National Ocean Survey

R. Adm. H. R. Lippold, Jr., Director

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## Preface

To restore and maintain monuments along the boundaries between the States of Delaware and Maryland, officials of the two States recommended in the early 1950's that resurveys be performed of their common boundaries. In accordance with these recommendations, a resurvey of the north-south boundary (line BE, fig. 1) was made in 1961-62 by the U.S. Coast and Geodetic Survey (now the National Ocean Survey, a component of the U.S. Department of Commerce's National Oceanic and Atmospheric Administration). Also, a resurvey of the east-west boundary by the National Ocean Survey was completed in 1974 (line AB, fig. 1). Results of these surveys were used for resetting monuments found to be disturbed and for establishing new markers where the original monuments had been destroyed.

The remonumentation of the boundaries was completed in 1977. (See page 15, Markers Established Along Boundary Between Original Monuments 25 and 35.) A ceremony to commemorate the completion of the resurveys was held on June 26, 1978, the 214th anniversary of the survey begun by Charles Mason and Jeremiah Dixon on June 26, 1764. [See National Oceanic and Atmospheric Administration (1978).] During the commemoration, a bronze plaque was erected at the ceremonial site, a point on the north-south boundary where the Mason-Dixon Line intersects with Maryland-Delaware Route 404 (about 8 miles southeast of Denton, Md.).

The original surveys and the resurveys of the east-west and north-south boundaries between the two States are discussed in this report. The various sections of the boundaries are identified in figure 1.

Note that the north-south boundary was laid out by Mason and Dixon in 1764 and 1765, prior to the survey of the east-west boundary between Pennsylvania and Maryland, generally referred to as the Mason-Dixon Line. Actually, the original Mason-Dixon Line includes the boundary between Delaware and Maryland that extends northward from the southwest corner of Delaware to the northeast corner of Maryland.

The resurveys of the Delaware-Maryland boundaries by the National Ocean Survey were carried out on a reimbursable basis with the two States. Complete co-

operation was given by officials of both States in all phases of the operations. In addition, personnel representing Delaware and Maryland provided valuable assistance in the selection of sites and the setting of new markers along the boundaries.

In this publication, all data concerning positioning of boundary, reference, and horizontal control stations are computed on the North American Datum of 1927 (NAD 1927). Descriptions of all monuments along the boundaries, as shown with the horizontal control data in this report, were prepared by field parties that performed the surveys. These descriptions were included in the permanent files of the National Geodetic Survey and were reproduced in the format submitted by the field parties.

A project is now underway to perform a new adjustment of the North American 1927 Datum that will result in a "redefinition" of the North American geodetic networks. The project is scheduled for completion in 1985, and the published data will be identified as the North American Datum of 1983 (NAD 1983). Whereas the 1927 positional data will undergo a change, this will neither affect the physical positions of marked points nor significantly alter the definition of their relative positions. Thus, when required, any part of the boundaries may be rerun or missing monuments replaced by using either 1927 or 1983 data but not, of course, interchangeably.

To maintain consistency with the old standard of 1 foot equals 12/39.37 m exactly, use the following factors when converting any data relating to resurveys of 1961-62 and 1974 in this report.

$$1 \text{ meter} = 39.37/12 = 3.2808 \text{ 33333 ft.}$$

$$1 \text{ foot} = 12/39.37 = 0.30480 \text{ 06096 m.}$$

When the International Foot was adopted in 1959, it was decided that any data in feet derived from and published as a result of geodetic surveys within the United States would continue to be based on the old standard identified as the "U.S. Survey Foot." [See the National Bureau of Standards (1959) for this definition as well as that of the International Foot based on 1 inch equals 25.4 mm exactly.]

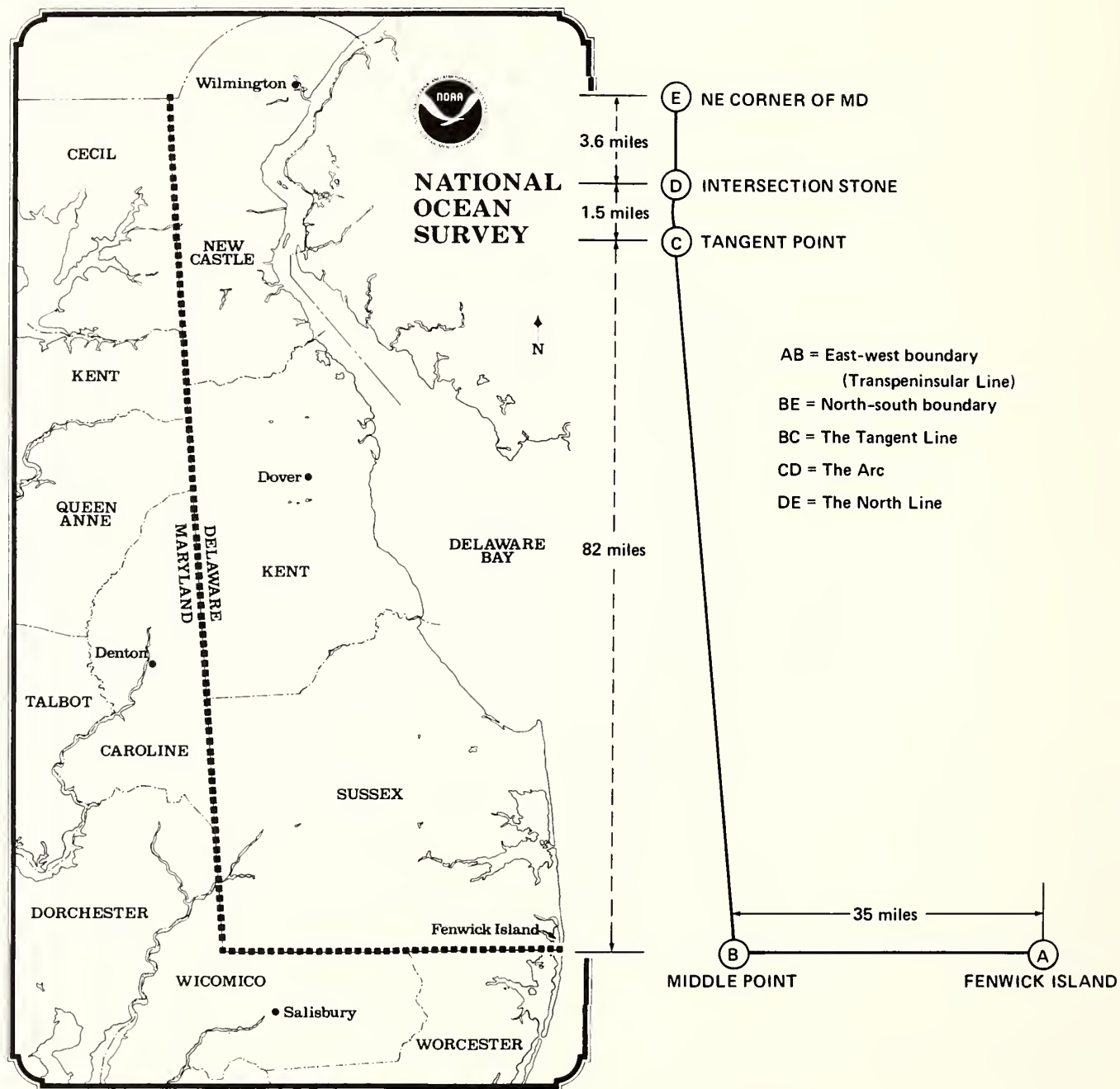


FIGURE 1.—Delaware-Maryland boundaries identified in this report.

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# REPORT ON SURVEYS OF DELAWARE-MARYLAND BOUNDARIES

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## INTRODUCTION

This report contains brief discussions of the various surveys that have been performed to delineate the boundaries (fig. 1) between the States of Delaware and Maryland. Descriptions, geographic positions, and State plane coordinates of the original monuments and new markers established along the boundaries are included as part of this report. Also included are the horizontal control data and descriptions of triangulation stations that were established at approximately 1-mile intervals in the vicinity of each boundary monument.

The east-west boundary (laid out originally by colonial surveyors in 1751) extends westward about 35 miles from the Atlantic Ocean at Fenwick Island to Middle Point, which is halfway from the Atlantic Ocean to Chesapeake Bay. A resurvey of this boundary was performed by the National Ocean Survey of the National Oceanic and Atmospheric Administration (U.S. Department of Commerce) in 1974. Surveys along this section of the boundary are discussed in part one of this report.

The north-south boundary, extending from Middle Point on the east-west boundary to the northeast corner of Maryland, was laid out by Charles Mason and Jeremiah Dixon in 1764 and 1765. Surveys along this boundary are discussed in part two.

These boundaries are defined in a final agreement (in appendix E and partially quoted below) between Lord Baltimore and the Penn heirs, dated July 4, 1760:

*First, that the draft or plan printed upon the margin of this skin of parchment which contains a map of the peninsula hereinbefore mentioned, and also of the tracts of ground wherein the said Province of Maryland (or part thereof) the said Three Lower Countys, Part of the said Province of Pensilvania and part of Virginia do lye, is a true copy of those which had been sent over from America to the present partys hereto by their respective Agents in those parts, for the assistance and guidance of the said partys in the settling of the said disputes, and by which this present agreement is to be explained and understood. Second, that there shall be the said circle mentioned in the said charter for Pensilvania, and Deed of Bargain and Sale or Feoffment of Newcastle, (or so*

*much thereof as is requisite) drawn and markt out at the twelve miles distance from the Town of Newcastle, which twelve miles shall be twelve English Statute miles. Third, that a due east and west line shall be drawn across the said Peninsula (or across so much of it as shall be requisite) such east and west line to begin on the east part at the place in the said draft or map called Cape Henlopen (which lyes south of Cape Cornelius) upon the eastern side of the said Peninsula towards the Main Ocean, and at the point of the said Cape, and to run towards the western side of the said Peninsula, which lyes upon the CHESOPEAK Bay, but to stop in the exact middle of that part of the same Peninsula, when so running a due east and west course. Fourth, that from the westward point or end of the said east and west line (which westward point or end shall be just half way across the said Peninsula) a straight line shall run northward, up the said Peninsula, (and above the said Peninsula if it require it) till it shall so touch the western part of the periphery of the said circle as to make a tangent thereto. The said strait line as at present apprehended will run pretty near south and north, but (however it may bear on the compass) such strait line shall be run northward up the said Peninsula (and above the said Peninsula if it require it) and shall begin at and from the western point or end of the aforesaid east and west line, and shall run until it touches and makes a tangent to the western part of the said periphery of the said circle, and there the said straight line shall end. Fifth, that at the northern point or end of the said strait line, a line shall begin, and shall from thence run due north above the said Peninsula, but so far-only until it comes into the same latitude as fifteen English Statute miles, due south of the most southern part of the City of Philadelphia. Sixth, that a due east and west line shall be run in manner following: It shall begin at the northern point or end of the said due south and north line, and shall from thence run due west across Susquehannah River, to the utmost western extent of the said Province of Pensilvania....*

The sixth part of the agreement is the east-west boundary between Maryland and Pennsylvania and is generally referred to as the Mason-Dixon Line. In the agreement, the boundary lines as quoted are repeated and followed by:

*...these are and shall be, and shall at all times for ever hereafter, be allowed and esteemed to be the true and exact limits and bounds between the said Province of Maryland and the said Three Lower Counties of Newcastle, Kent and Sussex, and between the said Provinces of Maryland and Pensilvania, excepting only, that in case the said north line from the tangent of the circle of New-castle shall break in upon the said circle. In such case, so much of the said circle as shall be cut off by the said line, shall belong to and be part of the County of Newcastle.*

In the 1760 agreement, the present State of Delaware is identified as the three lower counties of the Province of Pennsylvania. This fact is clarified by the following statement from Munroe (1978a).

*After William Penn received his royal grant of a province, which was to be bounded by a circular line 12-miles north of New Castle, he appealed to the Duke of York to cede the land between Pennsylvania and the ocean so the new province would not be land-locked. The Duke agreed and ceded his rights by four documents, two deeds and two leases, in August 1682. However, his formal grant from Charles II was not received until March 1683.*

This territory identified as the three lower counties, now the State of Delaware (the first State to ratify the U.S. Constitution), shared the Governor of Pennsylvania but had a separate legislature before the Revolutionary War. [For detailed historical information concerning the State of Delaware, refer to Munroe (1978b).]

## Boundary Disputes

Before the 1760 agreement was reached, various attempts were made to settle the boundary disputes that had been going on for more than 80 years. These disputes, between the Lords Baltimore and the Penn heirs, were due primarily to ambiguities that existed in the boundaries as defined in the original grants of the two provinces. The Maryland Charter (Bayliff 1959) was granted to George Calvert, first Lord Baltimore, in 1632 by King Charles I of England. Then, 49 years later, the Pennsylvania grant to William Penn resulted in the loss of a large part of Lord Baltimore's grant (Hodgkins 1893, Bayliff 1959).

A provisional agreement in 1732 provided for a line, as shown in figure 1, to be drawn due west from Cape Henlopen at Fenwick Island across the peninsula to Chesapeake Bay. The north-south boundary would then extend northward from Middle Point (identified as B to C, fig. 1) to a point where the line would be tangent

to a circle of 12-mile radius, with center at New Castle Courthouse. From the Tangent Point the boundary would follow the arc of the New Castle circle to the Intersection (identified as D, fig. 1) with the meridian through Tangent Point. From the point of intersection the boundary would extend northward along the meridian to a parallel of latitude 15 miles south of the southerly limits of Philadelphia (identified as E, fig. 1).

Following this agreement, commissioners of the two provinces met on several occasions to resolve three questions: (1) what should be the center of the circle around New Castle, (2) whether the circle should be of 12-mile radius or 12 miles in circumference, and (3) where the Cape, called Cape Henlopen in the articles of agreement, is situated. After discussing these questions at numerous meetings, the commissioners signed a joint statement that they could not reach an agreement.

These issues were finally settled in 1750 by Lord Hardwicke, High Chancellor of the English Crown, who issued a decree (partially quoted below) reinforcing provisions of earlier arrangements made in 1685 and 1732 (Bayliff 1959):

*...his Lordship Doth Declare that he is of the opinion that according to the true intent and instruction of the said articles, the center of the said circle ought to be fixed in the middle of the town of New Castle as near as the same can be computed, and that the said circle ought to be of a radius or semi-diameter of twelve miles, and that Cape Henlopen ought to be deemed and taken to be situated at the place where the same is laid down and described in the map or plan annexed to the said articles to be situated.*

On this map, which Lord Baltimore disputed, Cape Henlopen was placed at Fenwick Island about 15 miles south of the cape now known as Cape Henlopen.

The boundary as defined in the final agreement of 1760 was essentially the same as the provisional agreement of 1732 and reinforced by Lord Hardwicke's degree of 1750. Copies of Lord Hardwicke's degree and the 1760 agreement are included with this report as appendixes D and E, respectively.

## Recommendations for Resurvey of Boundaries

In the early 1950's, an inspection was made of all monuments along the Maryland-Delaware boundaries (fig. 1). The majority of the monuments, established about 200 years earlier, were generally in good condition. Some of the monuments, however, were chipped or broken, and some were out of position or missing. A report on the condition of each monument was then published by the Maryland Board of Natural Resources (Bayliff 1959). As a result of this inspection, officials of the two States held a special meeting in January 1954 and agreed on a plan for the restoration and mainte-



## Introduction

nance of their common boundaries. The following is a partial quote from Bayliff:

*FIRST, Maryland and Delaware will request Congress to pass an act directing the U.S. Coast and Geodetic Survey to resurvey the Maryland-Delaware boundaries with the following objectives: (a) To reproduce with the greatest possible fidelity the original Maryland-Delaware boundaries laid down by Colonial surveyors in 1751 and by Mason and Dixon during the years 1763-67; (b) To locate as accurately as possible the original position of each marker installed on these boundaries; and (c) To tie the original position of each boundary marker to the triangulation system of the surrounding territory so that the correct position of any marker can be accurately determined at any time in the future.*

In accordance with these recommendations, a bill (U.S. Congress 1955) was passed by the 84th Congress and signed by President Eisenhower on August 11. This bill states:

*The Secretary of Commerce, acting through the Coast and Geodetic Survey, is authorized and directed, upon the joint request of (1) the Board of Natural Resources of the State of Maryland, and (2) the State Archivist and the Chief Engineer of the Highway Department of the State of Delaware, to resurvey that part of the common boundary running generally north and south between the States of Maryland and Delaware which was originally surveyed and marked by Charles Mason and Jeremiah Dixon in the years 1763-1767 with a view to assisting such States to remark or otherwise delineate such boundary.*

In this bill, Congress did not provide funds to carry out the resurvey as directed; however, in 1956 the Coast and Geodetic Survey (presently, the National Ocean Survey) made a reconnaissance of the north-south and the east-west boundaries between the two States to report on the condition of all boundary monuments and to recover the triangulation stations that would be required to connect the boundary survey to the national

network of horizontal control. Following this reconnaissance survey, no action was taken by the Coast and Geodetic Survey to perform a resurvey of the boundaries because funds still had not been appropriated. Then, in the early part of 1961, the Secretary of Commerce directed the Coast and Geodetic Survey to make a resurvey of the north-south boundary in accordance with the Congressional Act of 1955.

As directed by the Secretary of Commerce, the Deputy Director of the Coast and Geodetic Survey issued instructions, dated August 21, 1961, to one of the Survey's field parties to perform a resurvey of the north-south boundary between the States of Delaware and Maryland. Field operations were started on this project on August 31, 1961; the project was completed on March 31, 1962.

While the north-south boundary resurvey was in progress, officials of Maryland and Delaware made a request to the Director, C&GS, that a resurvey of the east-west boundary be performed following completion of the north-south boundary resurvey. A letter from the Director to the State officials, dated December 15, 1961, states:

*You probably are aware that the current work is being done in accordance with a bill passed by Congress in 1955. At present, we do not have funds for an extension of the boundary survey, and such an undertaking with federal funds would have to be approved by Congress. Perhaps the States of Delaware and Maryland would be interested in promoting the project.*

The State officials were interested in promoting this resurvey because, in the original survey of 1751, the boundary monuments had been established at intervals of 5 miles. However, final action for a resurvey of the east-west boundary was not taken until 1973. Then, in the latter part of 1973, an agreement on a cost-sharing basis was signed by officials of the two States and by the Director, National Ocean Survey (formerly the Coast and Geodetic Survey) for a resurvey of the east-west boundary. (See appendix A.) Details concerning resurveys of the east-west and north-south boundaries are given in parts one and two, respectively.



# Part One

## East - West Boundary



(A)



(B)

*Fenwick Island boundary stone. Monument No. 0 of the east-west boundary was set by colonial surveyors in 1751. (A) South (Maryland) side of boundary monument shows Calvert coat of arms. (B) North (Delaware) side shows Penn coat of arms.*

Courtesy of: Ralph Poust



Courtesy of: Ralph Poust



(A)



(B)

*Boundary Monument No. 10 of the east-west boundary, set by colonial surveyors in 1751. U.S. Coast and Geodetic Survey triangulation station disk, stamped NORMAN 1932, is set in top of monument. (A) North (Delaware) side of monument. (B) South (Maryland) side of monument.*

Courtesy of: Ralph Poust



(A)



(B)

*Boundary Monument No. 20 of the east-west boundary, set by Colonial surveyors in 1751. There are no markings on this monument. (A) North (Delaware) side of monument. (B) South (Maryland) side of monument.*



# PART ONE

## EAST-WEST BOUNDARY

### Colonial Survey of 1751

In accordance with the decree by Lord Hardwicke in May 1750, commissioners from the provinces of Maryland and Pennsylvania met in the latter part of 1750 and agreed that surveyors employed on both sides should run the boundary line from Fenwick Island to the Chesapeake Bay (fig. 1). This boundary survey, identified as the Transpeninsular Line, was started in January 1751, and the line was extended to a point about 6 miles west of Fenwick Island. At this point, the survey operations were discontinued because of very bad weather. The surveyors resumed their operations in April 1751 and extended the line westward to the eastern side of the Chesapeake Bay. [See Bayliff (1959).]

This survey was accepted by commissioners of the two provinces, and, as stated in the final agreement of July 4, 1760 (also shown in appendix E), the following measurements are given:

*That the said spot or point, or place for beginning such due west line was and is, and shall at all times forever hereafter be established, held, taken and adjudged to be, where the said Commissioners so agreed upon, fixed and determined the same to be, namely, at a point on the verge of the Main Ocean, being at the distance of 139 Perches due east from a stone fixed by the said Commissioners, on the northern part of the land called Fenwick's Island.... That the true length and extent of the said west line was and is, and shall at all times for ever hereafter be esteemed, held, taken, and adjudged to be 69 miles and 298 Perches, neither more nor less. That consequently the exact middle of such west line, (from whence the other line is to begin, which is to run up the said peninsula till it makes a tangent to the western part of the periphery of the said part of circle, at the distance of 12 English statute miles horizontally, measured from the Court House in the said town of Newcastle), was and is, and shall at all times forever hereafter be esteemed, held, taken and adjudged to be at the exact distance of 34 of the said miles and 309 Perches so measured, west from the afore said spot or point, or place of beginning of the said west line.*

In the 1751 survey of the east-west boundary, stone monuments were set at Fenwick Island, the initial point of the boundary at a distance of 139 perches due west from the ocean, and at 5, 10, 20, and 25 miles from the ocean. At the start of the survey, it was thought that a distance of 25 miles from the ocean might be halfway across

the peninsula; and the halfway point was defined as the western terminal of the east-west boundary. The total distance across the peninsula was found to be 69 miles and 298 perches; therefore, the terminal point (identified as MIDDLE POINT) was half the total distance, or 34 miles, 309 perches from the Atlantic Ocean. (A perch equals 16.5 feet.) Posts were then set at the MIDDLE POINT and at the 30-mile point, and stone monuments were set at these two points in 1760. The stone monument identified as the 35-mile marker was set 32 inches north of the true MIDDLE POINT. Then in 1768, a double crownstone was set at MIDDLE POINT by Mason and Dixon.

When the east-west boundary survey was started in 1751, the surveyors were instructed to set posts at intervals of 1 mile along the boundary. However, if these instructions were carried out, there have been no reports that any of the posts have been found. The seven monuments set in the original survey, five set in 1751 and two set in 1760, were cut from native stone. The monuments are from 2 to 3 ft in height and about 6 in. by 12 in. in cross section. On the south side of each monument was inscribed the arms of Lord Baltimore, and on the north side the arms of the Penns. In the general vicinity of the 15-mile point along the boundary, there was no convenient place to establish a marker because of swamps in the area. Descriptive information for each monument along the boundary, except for Number 30 that was reported lost in 1972, is given with the horizontal control data at the end of part one.

### Resurvey by the National Geodetic Survey in 1974

A cooperative agreement between the States of Delaware and Maryland and the National Geodetic Survey (presently, a component of the National Ocean Survey of the National Oceanic and Atmospheric Administration) for a resurvey of the east-west boundary was signed in the latter part of 1973. A copy of this agreement is given as appendix A of this report.

Before all parties had signed the cooperative agreement, instructions were issued by the Director, National Geodetic Survey, to a field party of NGS to perform a reconnaissance survey of the boundary. The reconnaissance was carried out in accordance with the instructions, and this phase of the operations was completed in the early part of November 1973. Then on November 30, 1973, instructions were issued by the Director to one of the NGS field parties to begin

observations for a resurvey of the east-west trans-peninsular Maryland-Delaware boundary line. These instructions stated:

*Observations should begin at station FENWICK ISLAND 1932 RM 5 and proceed west to station MD-DEL CORNER RM 4 (MIDDLE POINT). Traverse stations are to be established along the boundary at intervals of approximately one mile. After the survey is completed, the States of Maryland and Delaware, with the cooperation of NGS, will establish permanent monuments to mark the boundary. Observations on the project will conform to specifications for Second-Order, Class 1, Electro-Optical Traverse as per memorandum dated November 2, 1970. Bench mark connections will be made at periodic intervals along the traverse and vertical angles observed over all lines.*

The resurvey was started the last week in January 1974, and observations were completed during the first week of June 1974. (See fig. 2.)

All of the 5-mile monuments established in the original survey, except the 30-mile monument, were recovered in the resurvey of 1974. However, the original stone Number 25 was reset about 13 ft south of the boundary during highway construction in the early 1950's. At that time, a pin was set under a manhole cover to mark the original location of the boundary monument. The stone, as set by the highway department, was positioned in the resurvey; it is identified as Boundary Monument 25 Offset.

## Analysis and Adjustment of Observational Data

All observational data relating to the 1974 resurvey were submitted to the Rockville, Md., Office of the National Geodetic Survey shortly after the project was completed. The data were first reviewed and checked; then a free adjustment was made to evaluate accuracies obtained in the survey. In this adjustment, only one station was held fixed in position; and all observed directions and distance measures were used as observation equations. Results of the free adjustment indicated that all points along the boundary were established well within the specified accuracy. Also, the results showed that all stations in the survey, which had been established in previous surveys, could be used as control in a constrained adjustment. Stations used as control in the constrained adjustment include four boundary monuments that were positioned in a survey extension of the national net in 1932. These stations are the initial monument at Fenwick Island (Monument 0), Monuments 10, 20, and MD DEL CORNER (MIDDLE POINT or Monument 35). Figures 3, 4, and 5 show all new points established and old points recovered in the 1974 survey. Figure 6 shows all monuments along the boundary with relation to roads throughout the area.

## REPORT ON FIELD WORK OF 1974 RESURVEY OF EAST-WEST BOUNDARY

A —All field work conformed to specifications for a second-order, class 1, electro-optical traverse as outlined in a memorandum dated November 2, 1970, as stated in the project instructions.

B 1—The project consisted basically of two traverses. One used primarily old stations and existing boundary markers along the traverse route. The stations were approximately 5 miles apart. All of these stations had Bilby steel towers erected over them, and all work was done at night from these stations. At intervals of approximately 1 mile between the above stations, new stations were established. The purpose of these new stations is to aid in monumentation of the Maryland-Delaware boundary. Broken leg ground traverses were used to connect the 1-mile stations to the 5-mile stations. The ground traverses were then projected onto the 5-mile sections. The electronic distance measuring equipment used along the ground traverse provided an independent check on the equipment used on the 5-mile lines.

B 2—A minimum of eight circle positions on all stations was taken with a Wild T-3 theodolite. All 1-mile stations have a permanent reference/azimuth mark to be used later when permanent boundary marks are established from the 1-mile stations. The ground traverses were performed between 0800 and 1700 hours, whereas the 5-mile stations were occupied during the late afternoon and early evening.

B 3—All instruments on towers were centered carefully with Kern Optical Collimators to assure proper accuracy. All tripods were plumbed over marks or temporary points before their use.

B 4—All distances greater than 2000 meters were measured with an AGA Geodimeter Model 4L-6A, Serial No. 284L. The short ground traverse lines were measured with a Hewlett-Packard Model 3800 distance measuring instrument. The short lines measured with the HP 3800 were measured in both directions to assure accuracy of the measurement. The Geodimeter measurements consisted of four reflector settings, one each at +0.4-meter and at -0.4-meter offsets and two each at the zero point. Temperature and barometric pressure were monitored and recorded at all times during measurements with both instruments.

B 5—Bench-mark ties necessary to determine and control elevations for the reduction of distance measurements were observed with a Zeiss NI 2 self-leveling level. Five bench marks were incorporated into the traverse.

### STATISTICS

Length of traverse in miles	39.6
New stations established	31
Stations recovered	14
Stations occupied	38
Traverse loops	10
Average height of towers (ft)	97
Number of lines measured with Geodimeter	14
Number of lines measured with HP-3800	106

**FIGURE 2.—Information as given in the National Geodetic Survey project report of the 1974 resurvey of the east-west boundary.**



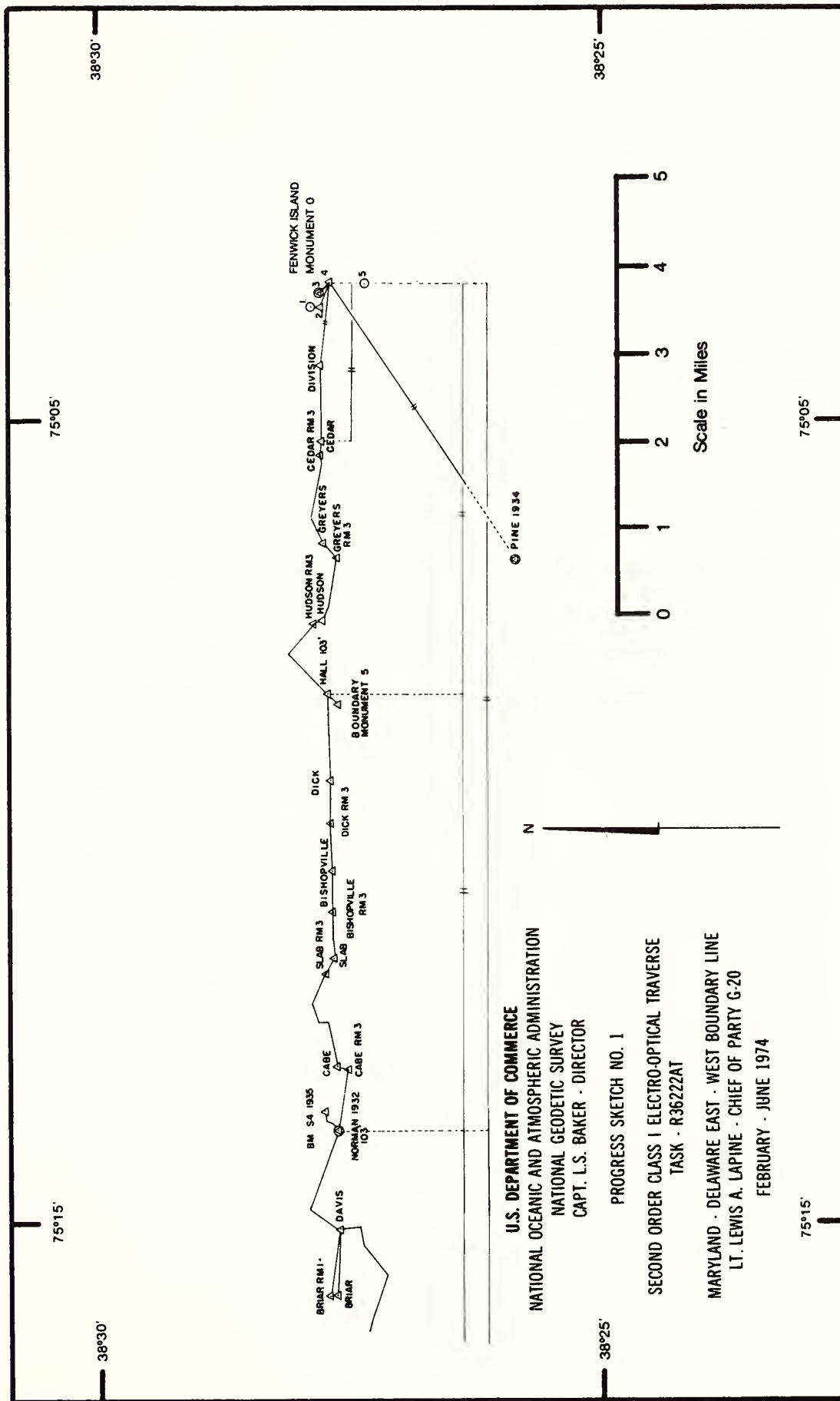


FIGURE 3.—The 1974 east-west boundary survey depiction of section 1.

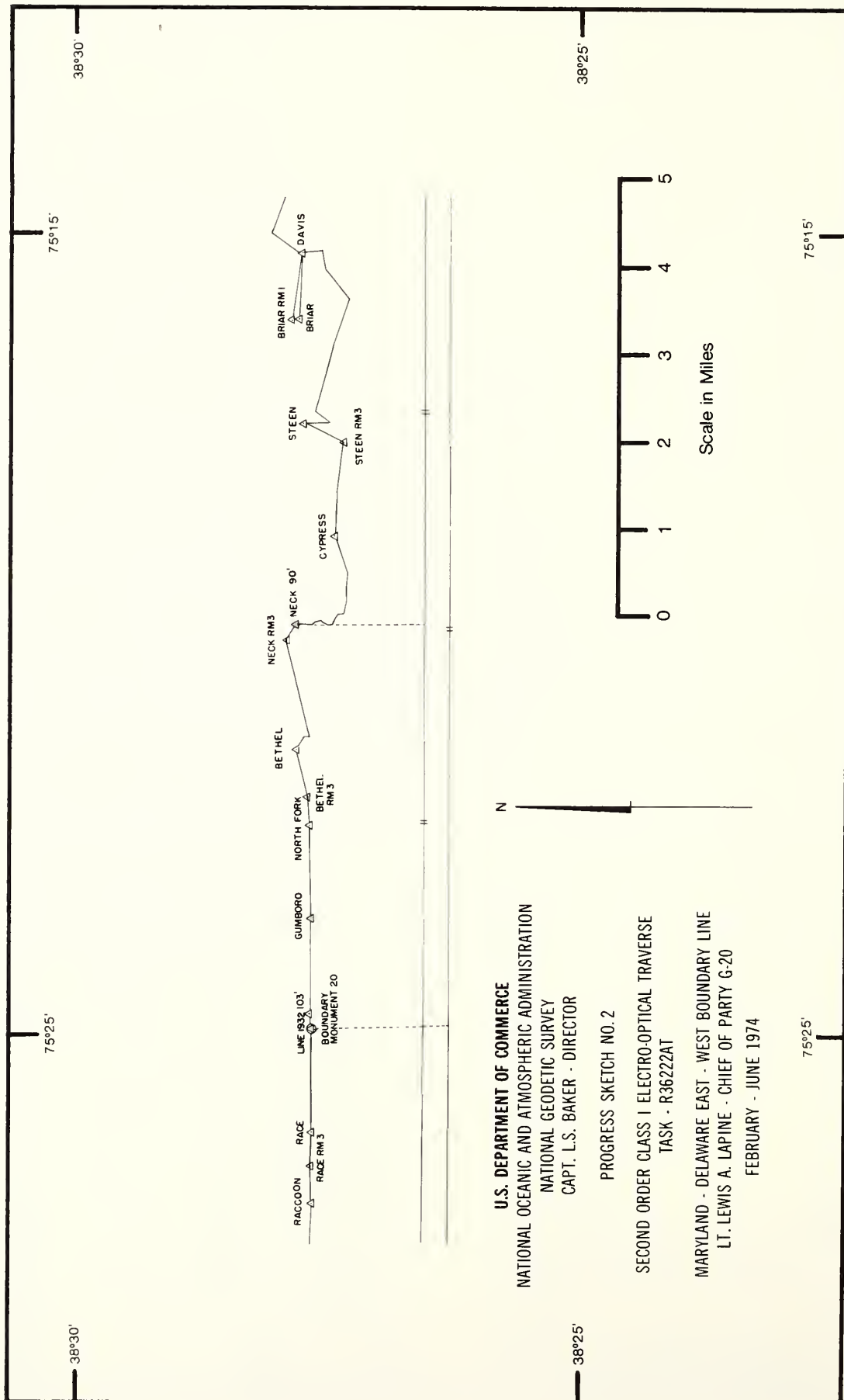


FIGURE 4.—The 1974 east-west boundary survey depiction of section 2.

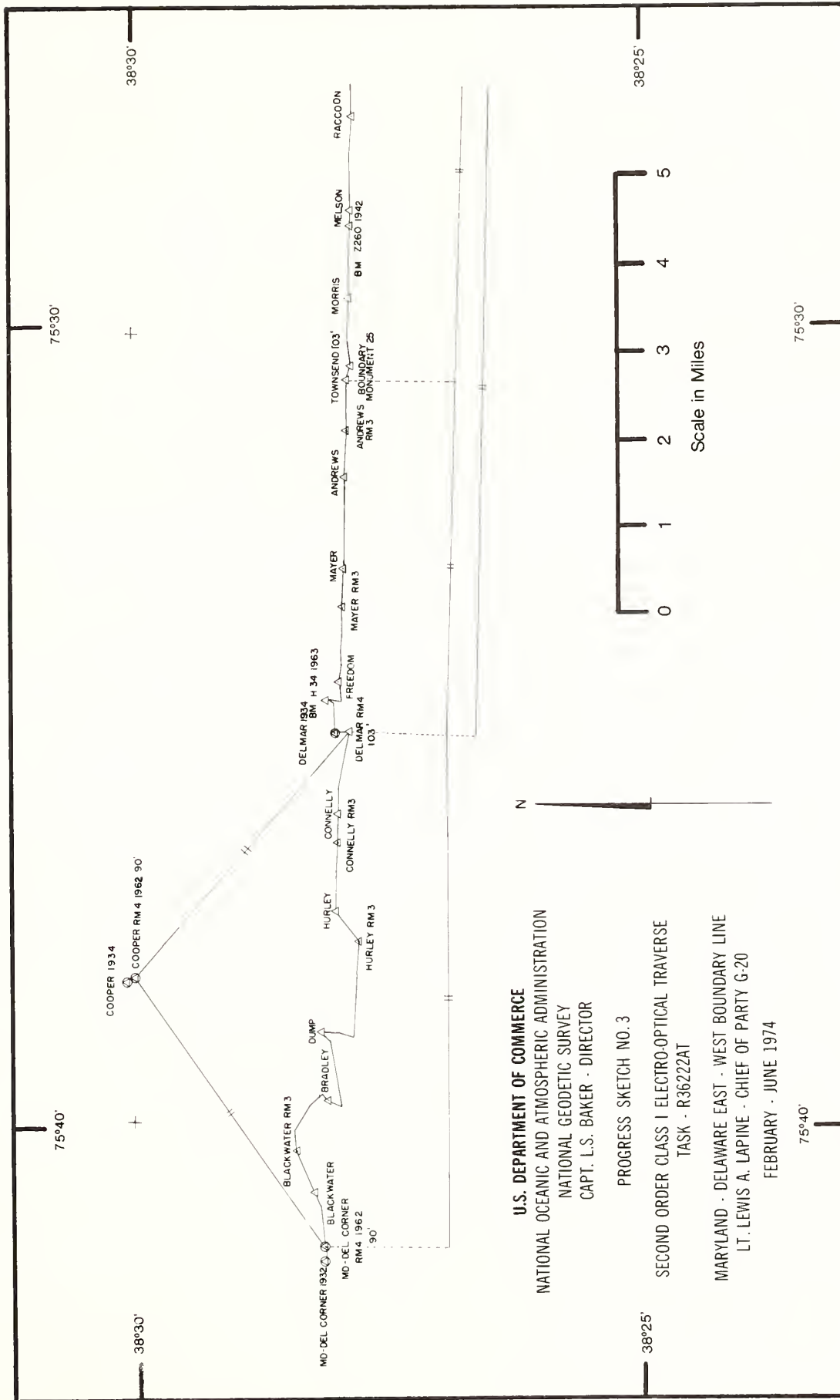


FIGURE 5.—The 1974 east-west boundary survey depiction of section 3.

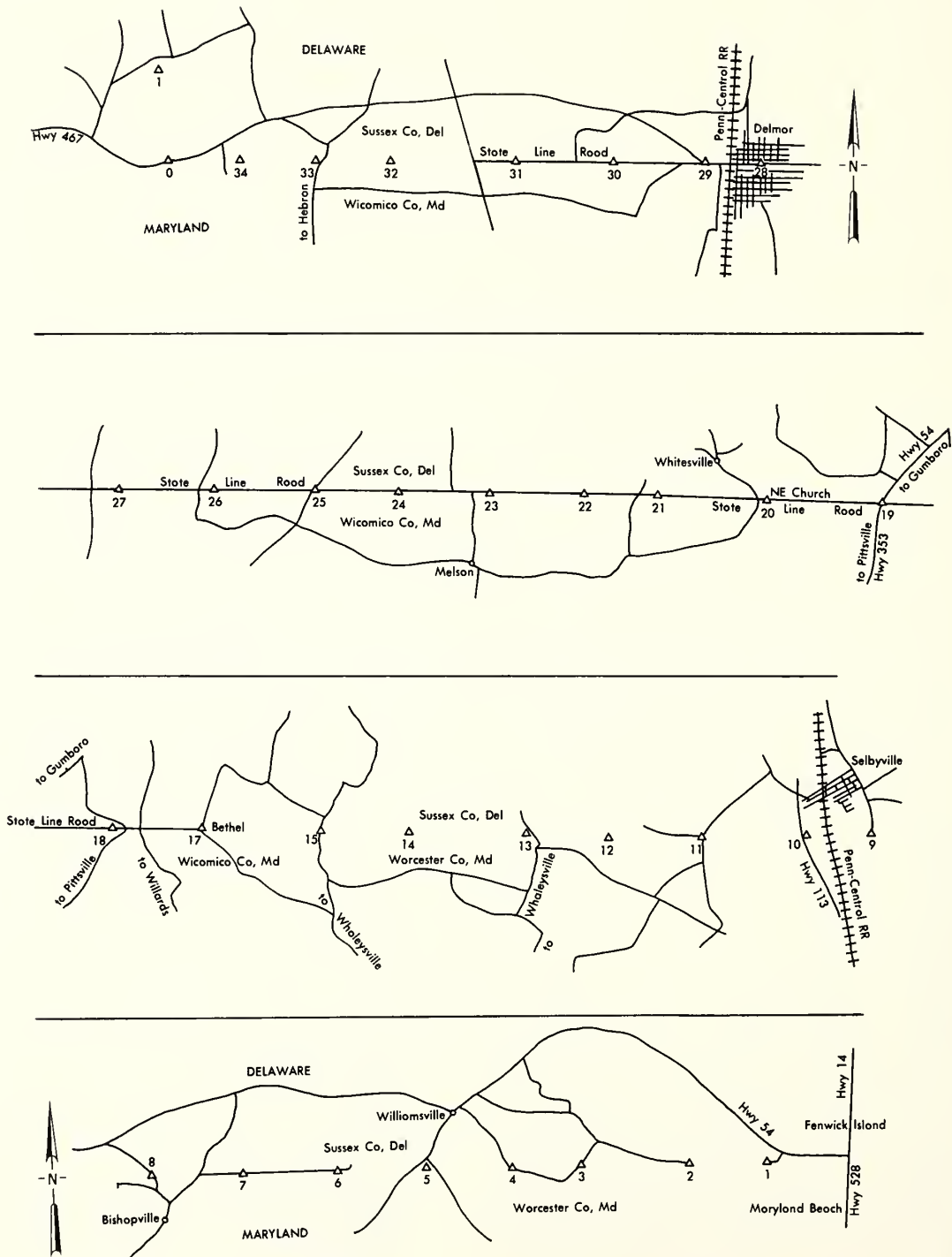


FIGURE 6.—Markers along east-west boundary, Fenwick Island to Middle Point.

On figure 6, Monument 0 to the west of Number 34 is MIDDLE POINT and the beginning point for the north-south boundary. Monument Number 1, to the north of Monument 0, is also on the north-south boundary.

As stated in the 1760 boundary agreement, the 1751 colonial survey distance from the ocean to MIDDLE POINT is 34 miles and 309 perches (5,098 ft), or 34.96553 miles. When using a unit of 5,292 feet per mile, as determined from resurveys of the old boundaries, the colonial distance is then 185,038 ft. The distance as determined from the 1974 resurvey is only 189 feet greater than the 1751 measurement. The 1974 value was obtained as follows:

Ocean to Monument 0\* = 2,293 ft  
(139 perches as given in 1760 agreement)  
Monument 0\* to Monument 35 = 182,934 ft  
(inverse computation from positions)  
Total = 185,227 ft

\* Monument 0 at Fenwick Island.

### Recommendations by NGS for Marking the Boundary at 1-Mile Intervals

After final adjusted results of the 1974 survey were reviewed, the National Geodetic Survey submitted recommendations to the boundary commissioners of Delaware and Maryland as follows:

*Unless there is some evidence that the boundary monuments have been moved from their original locations, they should be accepted as defining the boundary. If it is agreeable with officials of the States of Delaware and Maryland, the National Geodetic Survey will compute offset distances, from each station established near the boundary, to points which will mark the boundary at one-mile intervals. These computations will be based on the following lines between existing monuments which define the boundary, 0 to 5, 5 to 10, 10 to 20, 20 to 25(Pin), and 25(Pin) to 35.*

(See page 15, Markers Established Along Boundary Between Original Monuments 25 and 35.)

In accordance with these recommendations, commissioners of the two States requested that the offset distances be computed. These distances along with angles (clockwise from an azimuth reference) were then computed at 29 stations, and the results were furnished to the commissioners of each State on March 27, 1975. Then on May 7, 1975, commissioners of the two States met in Dover, Delaware, and agreed on final action to be taken in marking the east-west boundary at intervals of approximately 1 mile. As a result of this meeting, a memorandum of understanding between the State of Delaware and the State of Maryland was drawn and signed by the commissioners of the two States. A copy of this memorandum of understanding is given as appendix B.

As stated in paragraph 4 of the memorandum of understanding, parties representing the State of Delaware, the State of Maryland, and the National Geodetic Survey selected sites along the boundary where markers could be established at intervals of about 1 mile. Temporary marks were then set at the sites selected, measurements were made to the traverse or triangulation stations nearby, and descriptive information was prepared for each of the 29 sites to be permanently marked on the boundary. This information was then submitted to the commissioners of each State for approval.

The boundary sites as selected were approved, and the setting of permanent markers on the boundary was started in 1976. This phase of the operations was com-

**TABLE 1.—Azimuths to verify setting new  
markers on the east-west boundary  
between the original monuments**

Monument Number		Azimuth (from south)		
From	To			
0 <sup>1</sup>	5 <sup>1</sup>	89°	57'	45.2''
	1	89	57	45.3
	2	89	57	45.5
	3	89	57	45.2
	4	89	57	45.1
5 <sup>1</sup>	10 <sup>1</sup>	90	03	57.7
	6	90	03	58.2
	7	90	03	57.9
	8	90	03	57.7
	9	90	03	57.9
10 <sup>1</sup>	20 <sup>1</sup>	90	34	34.4
	11	90	34	34.0
	12	90	34	34.1
	13	90	34	35.7
	14	90	34	34.4
	15	90	34	34.6
	17	90	34	34.0
	18	90	34	34.2
	19	90	34	34.4
20 <sup>1</sup>	25 <sup>1</sup>	91	24	13.6
	21	91	24	14.0
	22	91	24	14.2
	23	91	24	13.4
	24	91	24	13.9
25 <sup>1</sup>	30	91	58	48.5
	26	91	58	48.8
	27	91	58	49.1
	28	91	58	48.9
	29	91	58	49.0
30	35 <sup>1,2</sup>	92	39	37.2
	31	92	39	38.8
	32	92	39	38.0
	33	92	39	37.6
	34	92	39	37.2

<sup>1</sup> Original boundary monument.

<sup>2</sup> Monument Number 35 is at the western terminal of the east-west boundary, and this is the starting point for the north-south boundary. For position and description, see MD DEL CORNER BDY MONUMENT 0.



**TABLE 2.—Azimuth and distance between monuments along the east-west boundary**

Monument Number From To		Azimuth (from south)			Distance (meters)
0	1	89°	57'	45.3"	1295.337
1	2	89	57	12.4	1406.713
2	3	89	56	35.5	1913.633
3	4	89	55	46.5	1226.377
4	5	89	55	15.9	1541.832
5	6	90	03	58.2	1594.693
6	7	90	03	16.7	1681.150
7	8	90	02	33.3	1610.577
8	9	90	01	53.0	2005.746
9	10	90	01	00.1	1188.309
10	11	90	34	34.0	1825.092
11	12	90	33	47.6	1199.080
12	13	90	33	20.7	1949.863
13	14	90	32	23.8	2084.105
14	15	90	31	34.4	1615.424
15	17	90	30	48.9	2104.300
17	18	90	29	59.5	1600.581
18	19	90	29	18.0	1723.117
19	20	90	28	33.2	2031.087
20	21	91	24	14.0	1947.375
21	22	91	23	24.6	1321.472
22	23	91	22	48.1	1735.496
23	24	91	22	07.0	1619.735
24	25	91	21	22.4	1450.001
25	26	91	58	48.8	1847.213
26	27	91	58	02.0	1687.264
27	28	91	57	17.9	1920.680
28	29	91	56	29.7	1022.343
29	30	91	56	00.5	1598.605
30	31	92	39	38.8	1799.304
31	32	92	38	51.2	2236.175
32	33	92	37	53.1	1282.752
33	34	92	37	19.2	1395.170
34	35	92	36	45.3	1307.284

pleted in the early part of 1977, and final measurements between the boundary markers and the nearby traverse and/or triangulation stations were used to compute positions of the boundary stations.

Azimuths given in table 1, computed from the final positions published by the National Geodetic Survey, verify the alignment of new markers established along the boundary between the original monuments. Azimuths and distances between consecutive monuments along the total length of the boundary are given in table 2. The traverse and/or triangulation stations from which the boundary markers were established are given in table 3.

Horizontal control data and descriptions for each station along the boundary appear on pages 16 to 87. Data for the boundary monuments are arranged in numerical order by monument number, and the traverse or triangulation stations are arranged in alphabetical order.

**TABLE 3.—Boundary Monuments and traverse or triangulation stations from which the Monuments were established**

Monument Number	Date set	Traverse or triangulation station
0	1751	FENWICK ISLAND 1932 (RM 2, 1932 was set in top of boundary monument.)
1	1976	DIVISION 1974
2	1976	CEDAR 1974
3	1976	GREYERS 1974
4	1976	HUDSON 1974
5	1751	HALL 1974
6	1976	DICK 1974
7	1976	BISHOPVILLE 1974
8	1976	SLAB 1974
9	1976	CABE 1974
10	1751	NORMAN 1932 (Triangulation station disc, stamped NORMAN, was set in top of boundary monument in 1932.)
11	1976	DAVIS 1974
12	1976	BRIAR 1974
13	1976	STEEN 1974
14	1977	CYPRESS 1974 (Boundary monument disk is stamped 1976.)
15	1976	NECK 1974
17	1976	BETHEL 1974
18	1976	NORTH FORK 1974
19	1976	GUMBORO 1974
20	1751	LINE 1932
21	1976	RACE 1974
22	1976	RACCOON 1974
23	1976	MELSON 1974
24	1976	MORRIS 1974
25	1950	TOWNSEND 1974 (This boundary marker is a pin set under a manhole cover during highway construction in 1950. The pin was set in the original location of boundary stone 25. The stone was reset 13.8 ft to the south.)
25 OFFSET	1950	TOWNSEND 1974 (Boundary stone set in 1751 was moved 13.8 ft to the south in 1950. See Mon. No. 25.)
26	1981	ANDREWS 1974
27	1981	MAYER 1974
28	1981	FREEDOM 1974
29	1981	DELMAR RM 4 1974
30	1981	CONNELLY 1974 and CONNELLY 2, 1981
31	1981	HURLEY 1974
32	1981	DUMP 1974
33	1981	BRADLEY 1974
34	1981	BLACKWATER 1974
35 <sup>1</sup>	1768	MD DEL CORNER RM 4 1962 (Triangulation station disk MD DEL CORNER 1932 is set in top of boundary monument. This monument was set by Mason and Dixon in 1768. Another stone, 32 in. to the North, was set by Colonial surveyors in 1760.)

<sup>1</sup> This monument, also identified as MIDDLE POINT, is the starting point for the north-south boundary between Delaware and Maryland. In the published horizontal data this monument is identified as MD DEL CORNER BDRY MONUMENT 0.



## Markers Established Along Boundary Between Original Monuments 25 and 35

After markers were established at intervals of about 1 mile between Boundary Monuments 25 and 35 in the 1976 survey, it was discovered that this line was north of the original historical boundary laid out in 1751. This was due to the fact that Boundary Monument 30 had been destroyed and the new markers were placed on line between the original monuments 25 and 35, thereby disregarding the curvature of the historic line indicated by Boundary Monument 30.

An investigation was then made to locate the original site of Boundary Monument 30. In this investigation, a report was found which gave descriptions of all existing boundary monuments along the Transpeninsular Line. This report by James A. Kelley (1973), which was published in *The Archeologist*, a publication of the Sussex Society of Archeology and History, Volume XXV, gives the following description of Boundary Monument 30:

*This stone stood for 212 years on the Line Road, about 2.4 miles west of dual U.S. 13. Sometime in early 1972 it disappeared overnight. When last seen by the author, it was in poor condition. Had been placed by the Commissioners in 1760. Was a native crownstone.*

From the descriptive information of traverse stations established along the boundary in 1974, it was found that station CONNELLY was located at a distance of 2.45 miles west of U.S. Highway 13. Therefore, a preliminary location of Monument 30 was placed at a distance of 12 ft north of station CONNELLY and at a distance of 9 ft south of the centerline of the road. Because Boundary Monument 25 was found to be 9 ft south of the centerline of State Line Road, Monument 30 was placed at the same distance south of the centerline.

At the request of the Director, Maryland Geological Survey, the Maryland Department of Natural Resources made a further investigation to locate the original site of Monument 30. Information provided from this investigation strongly supported the location which had been selected for Monument 30. In addition, a sketch of the reconnaissance survey performed by the Coast and Geodetic Survey in 1956 showed a connection to a boundary stone from CONNELLY, a station site selected in the survey. Station CONNELLY, established in the 1974 survey, was set in the same general area as the site selected in the 1956 reconnaissance survey.

Similar investigations of historical records and road surveys were conducted by the Delaware State Boundary Commission and its associates. In addition, theoretical positions of the Transpeninsular Line were generated by computer-based studies at the Delaware Geological Survey. Although no specific, conclusive information about the location of missing Boundary Monument 30 was discovered, all available circumstantial evidence reinforced the decision to select the position indicated here.

A theoretical position was computed for Monument 30 from the established position of station CONNELLY, and theoretical positions were then computed at intervals of approximately 1 mile and on line between Boundary Monument 25 and Monument 30 and between Monuments 30 and 35. These theoretical positions were then used to compute azimuths and distances to the nearby traverse stations that were positioned in the 1974 survey.

In August 1980 a survey was performed to establish temporary points, based on the theoretical computed data, at boundary sites 26 through 34. The nine temporary points were marked with nails and/or spikes; then officials of the two States were requested to approve the temporary sites before setting the boundary monuments. At the time of this survey in 1980, a resident of the area living 0.5 mile west of the site selected for Monument 30 stated:

*A stone monument on the south side of the road, about one-half mile down the road, disappeared 8 or 10 years ago.*

This statement agrees with the description of Monument Number 30 given in the *Archeologist* and further confirms the site selected for Monument 30.

In the early part of 1981 officials of Delaware and Maryland gave their approval for establishing boundary monuments at the temporary sites that were marked in 1980. The final survey was delayed for a few months, and in August 1981 the nine boundary monuments from 26 through 34 were established and positioned. This survey was performed by the National Geodetic Survey with assistance provided by the States.

During the 1981 survey the brass discs were removed from markers 26 through 34 that were placed in 1976 and were replaced with new discs stamped E - W No. 26, etc. Distances and azimuths from the boundary monuments established in 1981, to the 1976 markers, are given in the descriptions of the 1981 boundary monuments. The earlier markers may serve as reference markers for the true boundary monuments.

## Seaward Extension of the East-West Boundary

With reference to paragraph 7 in the memorandum of understanding between the State of Delaware and the State of Maryland (appendix B), a plan or method for the seaward extension of the east-west boundary had not been decided when this report was submitted for publication in 1982. Negotiations on the seaward extensions of boundaries were complicated by the passage of the Coastal Zone Management Act Amendments of 1976 and their associated regulations that require the establishment of administrative boundaries on the continental shelves.

**Horizontal Control Data  
for East-West Boundary  
pages 16 to 87**

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

## RECOVERY NOTE, TRIANGULATION STATION

FENWICK RM 2 (Initial Md-Del Bdry lbn)

NAME OF STATION:

ESTABLISHED BY:

RECOVERED BY:

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

HEIGHT OF TELESCOPE ABOVE STATION MARK

FEET.

YEAR: 1932 STATE: Md-Del Line

YEAR: 1974 COUNTY: Worcester or Sussex

IN Fenwick Island.

HEIGHT OF LIGHT ABOVE STATION MARK

FEET.

BENCH MARK ALSO ☐

SUSSEX

IN Fenwick Island.

HEIGHT OF LIGHT ABOVE STATION MARK

FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
FENWICK ISLAND RM 5 (Electronic Distance)	E	198.59	60.530	"

The monument is located at Fenwick Island, near the Fenwick Island Lighthouse.

To reach the monument from the junction of State Road 14 and 54 in Fenwick Island, go south on State Road 14 for 0.05 mile to the State Line and a side road right. Turn right and go west on a sand road for 0.1 mile to the monument on the right.

The mark, a 6 by 12 inch granite monument with a U.S.C. & G.S. reference mark disk cemented in the top, stamped FENWICK ISLAND NO 2 1932. The monument is projecting 36 inches above the ground surface.

For additional information see description for FENWICK ISLAND RM 5.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

NAME OF STATION: INITIAL MD DEL BDRY MON FENWICK RM 2 \*

STATE: DELAWARE - MARYLAND YEAR 1932

STATE: DELAWARE - MARYLAND YEAR 1932

STATE: DELAWARE - MARYLAND YEAR 1932

STATE: DELAWARE - MARYLAND YEAR 1932

STATE: DELAWARE - MARYLAND YEAR 1932

SOURCE: C-1895

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 04.08200	ELEVATION	4.23 METERS
GEODETIC LONGITUDE:	75 03 19.18500		13.9 FEET

STATE & ZONE	CODE	STATE COORDINATES (Feet)		PLAN AZIMUTH (from mark)	CODE
		N	E		
DE	0700	603,485.49	164,490.30	+ 0 13 29	
MD	1900	1,356,892.38	230,919.41	+ 1 13 14	

\* PLAN AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLAN AZIMUTH (from mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF JUN 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION FENWICK IS  
LEVELING BY CDS

MAY 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 56-39  
(12-76)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **BOUNDARY MONUMENT** STATE: **Maryland** COUNTY: **Worcester**  
NEAREST TOWN: **Ocean City** SURVEY NO.: **Q300752** DESCRIBED BY: **R.G. Foust**  
CHIEF OF PARTY: **C.L. Novak** YEAR: **1976**

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK		DISTANCES TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		METERS	
	UNDERGROUND-STATION MARK	SURFACE-STATION MARK	OBJECT	BEARING	FEET	METERS

The position of this monument was found to be in an east-west road. The monument was placed below a 24-inch round manhole in the road. It is located 3 miles north of Ocean City, 3/4 mile west of Fenwick Island, and just east of a waterway. It is on road right-of-way. To reach from the intersection of Delaware State Highway 54 and 14 in Fenwick Island, go west on State Highway 54 for 0.75 mile to a side road left. Turn left and go south on Jefferson Avenue for 0.1 mile to Hayee Avenue. Turn right, go west on Hayee Avenue for 0.15 mile to the manhole and the monument under the road.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 1 1976, set in the top of a 12-inch monument which is 20-inches below the top of the manhole. The sub-surface marker is a National Geodetic Survey Triangulation Station Disk stamped E-W NO. 1 1976, set in an 8-inch mass of concrete which is 48 inches below the surface of the road. They are 49 feet south of the southeast corner of porch of first house to the north, 22 feet north of a witness post, 21 feet south-southeast of a powerline pole numbered 15, and 1 foot south of the center of the road.

For additional information, see description for station DIVISION 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 1** SECOND ORDER  
STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SOURCE: **G-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 04.05125	ELEVATION	NO CHECK	1 METERS
GEODETIC LONGITUDE	75 04 12.60460			

### STATE COORDINATES (FZ-11)

STATE & ZONE	CODE	N	E	PLAN ARITHMETIC
MD	1900	1,352,603.73	230,826.13	+ 1 12 40
DE	0700	599,235.73	164,470.87	+ 0 12 56

\* PLAN ARITHMETIC HAS BEEN COMPUTED BY THE  $\phi \cos \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLAN ARITHMETIC (from north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION DIVISION



## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY  
BOUNDARY MONUMENT 2  
NAME OF STATION: Ocean City  
STATE: Delaware  
COUNTY: Sussex  
QUADRANGLE NO.: Q380752  
YEAR: 1976  
DESCRIBED BY: R.G. Pouet

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 2

STATE: DELAWARE - MARYLAND YEAR: 1976

SECOND OWNER

SOURCE: G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 04.01016	ELEVATION:	NO CHECK
GEODETIC LONGITUDE:	75 05 10.61741		

STATE COORDINATES (feet)			
STATE & ZONE	CONE	X	Y
MD	1900	1,348,029.75	230,726.82
DE	0700	596,620.56	166,649.75

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S 10P Δ 47 FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CONE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION CEDAR

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK		HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
	OBJECT	MEASUREMENT	OBJECT	MEASUREMENT	FEET	METERS

The computed position of this monument was found to be in a safe location. It was monumented at this date.

The monument is located about 1 1/2 miles west of Fenwick Island, 3 1/2 miles northwest of Ocean City and on state owned property.

To reach from the intersection of State Highway 14 and 54 in Fenwick Island, go west on State Highway 54 for 4.25 miles to a side road left at the Sound Methodist Church. Turn left and go southwest on a paved road for 0.8 mile to a T-intersection just after passing a cemetery on the right. Turn left and go south on a paved road for 0.4 mile to a side road right at a farm. Keep straight ahead and go south and east on the paved road for 1.1 mile to the end of the road at the shoreline and the monument on the right.

The station surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 2 1976, set in the top of a 10-inch round concrete monument projecting 1 foot. The sub-surface marker is a standard National Geodetic Survey Triangulation Station Disk stamped E-W NO. 2 1976, set in a 12-inch mass of concrete 42 inches below surface. They are 68.0 feet southeast of a witness post, 30 feet south of the center of the road, 22.6 feet east of a pile of concrete slabs, 22 feet southwest of the shoreline, and 1.2 feet north of a witness post.

For additional information, see description for Triangulation Station CEDAR 1974.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NO 1A FORM 74-39  
112-70b

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: **BOUNDARY MONUMENT 3**  
NEAREST TOWN: **Williamsville**  
CHIEF OF PARTY: **C.L. Novak**  
STATE: **Delaware**  
COUNTY: **SUSSEX**  
QUADRANGLE NO.: **Q380752**  
YEAR: **1976**  
DESCRIBED BY: **R.G. Pouat**

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION **BOUNDARY MONUMENT 3**

STATE **DELAWARE - MARYLAND** YEAR **1976**

SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 03.94115	ELEVATION	NO CHECK	2 METERS
GEODETIC LONGITUDE	75 06 29.53563			

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	S. LONG. & ANGLE
MD	1900	1,341,753.10	230,587.00	+ 1 11 15
DE	0700	588,342.28	164,421.01	+ 0 11 31

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $S \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from meridian)	PLANE AZIMUTH (from meridian)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION GREYERS

HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS		HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
SURFACE STATION MARK		DISTANCE		DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		DISTANCE	
UNDERGROUND STATION MARK		FEET		DIRECTIONS		METERS	
OBJECT							

The computed position of this monument was found to be in a cultivated field. A new point was selected to the west and out of any danger from farm operations.

It is located about 2 3/4 miles west of Fenwick Island, 1 1/2 miles south of Williamsville, and on road right-of-way. To reach from the intersection of State Highways 14 and 54 in Fenwick Island, go west on State Highway 54 for 4.25 miles to a side road left at the Sound Methodist Church. Turn left and go southwest on a paved road for 0.8 mile to a T-intersection just after passing a cemetery on the right. Turn left and go south on a paved road for 0.4 mile to a side road right at a farm on the right. Turn right and go west on a paved road for 0.3 mile to the monument on the left. The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 3 1976, set in the top of a 10-inch round concrete monument projecting 8-inches. The sub-surface marker is a standard National Geodetic Survey Triangulation Station Disk stamped E-W NO. 3 1976, set in a 12-inch mass of concrete 42-inches below the surface. They are 145 feet southeast of a gap in a northeast-southwest fence line, 24 feet southeast of the center of the road, 2 feet northwest of the fence, and 1.3 feet northwest of a witness post. For additional information, see the description for Triangulation Station GREYERS 1974.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
11-76

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 4  
NEAREST TOWN: Williamsville  
CHIEF OF PARTY: C.L. Novak  
QUADRANGLE NO.: Q380752  
STATE: Maryland  
COUNTY: Worcester  
YEAR: 1976  
DESIGNED BY: R.G. Pouat

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 4  
STATE DELAWARE - MARYLAND  
YEAR 1976  
SOURCE: G-10742  
NO OBSERVATION CHECK ON THIS POSITION  
ELEVATION: NO CHECK  
1 METERS  
FEET  
SECOND ORDER

NAME	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
SURFACE STATION MARK				
UNDERGROUND STATION MARK				
OBJECT	BEARING	DISTANCE	DIRECTION	
		FEET		
		METERS		

The computed position of this marker was found to be in a safe location. It was monumented at this date.

It is located 3 1/2 miles east-northeast of Bishopville, 3 1/2 miles west of Fenwick Island and 3/4 mile southeast of Williamsville. It is on property owned by Mr. Rollie Hudeon, Route 1, Box 94, Selbyville, Delaware.

To reach from the intersection of State Highway 14 and 54 in Fenwick Island, go west on State Highway 54 for 4.25 miles to a side road left at the Sound Methodist Church. Turn left and go southwest on a paved road for 0.8 mile to a T-intersection just after passing a cemetery on the right. Turn left and go south on a paved road for 0.4 mile to a side road right at a farm on the right. Turn right and go west on a paved road for 1.15 miles to a side road left and Mr. Hudson's home on the left. Continue northwest on the paved road for 0.05 mile to the northwest side of Mr. Hudson's barn and the monument.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 4 1976, set in the top of a 10-inch round concrete monument which is flush with the surface. The sub-surface marker is a standard National Geodetic Survey triangulation Station Disk stamped E-W NO. 4 1976, set in an 8-inch mass of concrete 42-inches below the surface. They are 55.5 feet southeast of a powerline pole with a transformer, 40 feet southwest of the center of the paved road, 32.5 feet south of a 12-inch walnut tree, 27.8 feet northwest of the northwest corner of Mr. Hudson's barn, and 24.2 feet southwest of a white wooden fence. For additional information, see description for Triangulation Station HUDSON 1974.

GEODETIC LATITUDE:	38 27 03.88929	ELEVATION:	NO CHECK
GEODETIC LONGITUDE:	75 07 20.11139		

STATE & ZONE	CODE	N	E	S	W	100' Δ 1" ANGLE *
MD	1900	1,337,730.61	230,498.69	+	1 10 43	
DE	0700	584,318.77	166,402.60	+	0 10 59	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION HUDSON



ADJUSTED HORIZONTAL CONTROL DATA

TRIANGULATION STATION Q380752 R

NAME OF STATION: BOUNDARY MONUMENT 5

ESTABLISHED BY:

YEAR:

STATE: Md-Del Line

BENCH MARK ALSO ☐

LEWIS A. LAPINOVICH; 1974 COUNTY: Sussex or Wicomico

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 0.7 mile south-southwest of Williamsville

HEIGHT OF TELESCOPE ABOVE STATION MARK FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
HALL (Traverse Distance)	ENE	(53.13)	16.193	"

The monument is located about 5 miles east of Selbyville, 4.5 miles west of Fenwick Island, 3 miles east-northeast of Bishopville, 0.7 mile south-southwest of Williamsville and on land owned by Mr. Rallie Hall, Selbyville, Delaware, telephone number 436-8808.

To reach the monument from Boyds Store in Williamsville, go southerly on a paved road for 0.6 mile to a side road left. Turn left and go east on a paved road for 0.05 mile to an opening in a fence on the right. Turn right and go southerly across an open field for 0.05 mile to a fence corner and the mark.

The mark, a 6 by 12 inch granite monument with a chiseled cross in the top and projects 2.4 feet above the ground surface. It is 14 feet east of an 18-inch oak tree and 10 feet southwest of the fence corner.

For additional information see description for triangulation station HALL.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 5 R

ESTABLISHED BY:

YEAR: 1751

STATE: Md-Del Line

BENCH MARK(S) ALSO ☐

RECOVERED BY: C. L. Novak

YEAR: 1976

COUNTY: Wicomico-Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles east-northeast of Bishopville

Detailed statement as to the fitness of the original description, including marks found, samples, changes made, and other pertinent facts:

The monument was recovered and found in good condition as previously described.

NAME OF STATION: BOUNDARY MONUMENT 5

STATE: DELAWARE - MARYLAND

YEAR: 1974

SECOND ORDER A

SOURCE: G-15790

NO OBSERVATION CHECK ON THIS POSITION

GEODESIC LATITUDE	38 27 03.81561	ELEVATION	4.1 METERS
GEODESIC LONGITUDE	75 08 23.69635	ELEVATION	13 FEET

STATE COORDINATES (feet)

STATE & ZONE	CODE	N	E	Y	PLANE ANGLE °
MD	1900	1,332,673.46	230,387.68	+ 1 10 03	
DE	0700	579,260.32	164,379.47	+ 0 10 20	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta$  &  $\theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODESIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

POSITION DETERMINED BY TRAVERSE FROM STATION HALL

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
1-1-76

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: 6 Delaware  
NEAREST TOWN: Bishopville  
CHIEF OF PARTY: C.L. Novak  
QUADRANGLE: 380752  
YEAR: 1976  
COUNTY: Worcester  
DESCRIBED BY: R.G. Pouet

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	DISTANCE AND DIRECTION TO STATION MARK	REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	BEARING	FEET	METERS	DIRECTION

The position of this monument was found to be in the eastbound lane of State Line Road. The monument was placed under a manhole at this date. It is located about 2 1/2 miles southeast of Selbyville, 1 1/2 miles northeast of Bishopville, and on road right-of-way.

To reach from the post office in Bishopville, go northeast on a paved road for 0.75 mile to a side road right. Turn right and go east on State Line Road for 0.9 mile to the azimuth mark on the left. Continue east on State Line Road for 0.5 mile to the manhole and the marker. The surface mark is a Maryland-Delaware Boundary Dike stamped E-W NO. 6 1976 set in the top of a 12-inch concrete monument which is 20-inches below the top of the 24-inch manhole. The sub-surface marker is a National Geodetic Survey Triangulation Station Dike stamped E-W NO. 6 1976, set in an 8-inch mass of concrete which is 48 inches below the surface. They are 19.3 feet north of a witness post, 16 feet north of a powerline pole numbered 12, and 3 feet south of the center of State Line Road.

For additional information, see description for station DICK 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 6  
STATE: DELAWARE - MARYLAND  
YEAR: 1976  
SECOND ORDER

SOURCE: G-10742  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 03.87018	ELEVATION:	NO CHECK	6 METERS
GEODETIC LONGITUDE:	75 09 29.46139			FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	# OF $\Delta$ BY ANGLE
MD	1900	1,327,442.63	230,287.13	+ 1 09 22
DE	0700	574,028.40	164,369.79	+ 0 09 39

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF  $\Delta$  BY FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION DICK

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY  
STATION

DESCRIPTION OF TRIANGULATION STATION  
BOUNDARY MONUMENT  
NAME OF STATION: Delaware  
NEAREST TOWN: Bladensburg  
CHIEF OF PARTY: C. L. Novak  
DATE: Maryland  
QUADRANGLE NO.: Q380752  
YEAR: 1976  
DESCRIPTED BY: R. J. Pount  
NATIONAL GEODETIC SURVEY  
SUSSEX COUNTY, Worcester

DESCRIBED BY: R.G. Poust

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS, 1/2	HEIGHT OF LIGHT ABOVE STATION MARK	METERS.
	SURFACE-STATION MARK.	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT UNDERGROUND-STATION MARK			

The computed position of this monument was found to be on the edge of state line road. There was no way to move it east or west on line. Maryland and Delaware requested that the monument be set on the right-of-way where the computed position falls.

The monument is located about 2 1/2 miles east-southeast of Selbyville, 1 mile east-southeast of Biehopville and on road right-of-way.

To reach from the post office in Blehopville, go northeast on a paved road for 0.75 mile to a elde road right. Turn right and go east on the state line road for 0.4 mile to the marker on the right.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 7 1976, set in the top of a 20-inch round concrete monument which is flush with the edge of the road. The sub-surface marker is a National Geodetic Survey Triangulation Station Disk stamped E-W NO. 7 1976, set in a 20-inch mass of concrete 48-inches below the surface. They are 66.4 feet southeast of a witness post, 22 feet north of the timber area, 11.5 feet south of the center of state line road, 8.6 feet north-north-east of a powerline pole numbered 18, 3.4 feet north of a witness post, and 1 foot east of the south edge of the road.

For additional information, see description for Triangulation Station BISHOPVILLE 1974.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION **BOUNDARY MONUMENT 7**

STATES:	DELAWARE - MARYLAND	YEAR	1976
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SECOND - ONE A

**Source: C-10742**

NO OBSERVATION CHECK ON THIS POSITION

38 27 03.91651  
75 10 38.79206

ELEVATION:  
NO CHECK

STATE COORDINATES (E&amp;I)

STATE & ZONE	CODE	N	Y	$\theta$ FOR $\Delta$ & $\nabla$ ANGLE <sup>a</sup>
MD	1900	1,321,928.19	230,181.13	+ 1 08 38
DE	0700	568,512.82	164,359.58	+ 0 08 56

PLANE AZIMUTH HAS BEEN COMPUTED BY THE 3-OR  $\Delta$  6: FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODOTIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
	• • • • •	• • • • •	

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION BISHOPVILLE.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

NOAA FORM 76-39  
(11-76)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 8  
NEAREST TOWN: Selbyville  
CHIEF OF PARTY: C.B. Novak  
STATE: Delaware  
COUNTY: Sussex  
QUADRANGLE NO.: Q380752  
YEAR: 1976

DESCRIBED BY: R.G. Pouet

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
	SURFACE-STATION MARK		DISTANCES AND DIRECTIONS TO ADJUTANT MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	UNDERGROUND-STATION MARK			
OBJECT	BEARING	FEET	METERS	DIRECTION

The computed position of this monument was found to be in a cultivated field. It was relocated 19.07 feet to the east and out of the cultivated field.

The monument is located 2 miles east of Selbyville, 8 miles west of Penwick Island and in the north edge of Bishopville. It is on road right-of-way.

To reach from the post office in Bishopville, go northeast on a paved road for 0.4 mile to a side road left. Turn left and go southwest on a paved road for 0.4 mile to the monument on the left.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 8 1976, set in the top of a 10-inch round concrete monument which is flush with the surface. The sub-surface marker is a standard National Geodetic Survey Triangulation Station Disk stamped E-W NO. 8 1976, set in an 8-inch mass of concrete 42-inches below the surface. They are 100 yards northwest of most northwest house in Bishopville, 93 feet southeast of a powerline pole numbered 19766, 66.5 feet northwest of a powerline pole numbered 19765, 24 feet northwest of a Maryland boundary road sign, and 14 feet south of the center of the road.

For additional information, see description for Triangulation Station SLAB 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 8

STATE: DELAWARE - MARYLAND

YEAR: 1976

SECOND-ORDER

SOURCE: C-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 03.95012	ELEVATION	NO CHECK	8 METERS
GEODETIC LONGITUDE	75 11 45.21206			FEET

STATE COORDINATES (feet)

STATE & ZONE	CODE	N	E	PLANE AZIMUTH * (from north)	CODE
MD	1900	1,316,645.26	230,079.58	+ 1 07 56	
DE	0700	563,228.81	164,369.79	+ 0 08 14	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION SLAB



NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**      STATE: **DELAWARE - MARYLAND**      YEAR: **1976**      SECOND - ORDER

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: **38 27 03.97764**      ELEVATION: **NO CHECK**      11 METERS  
GEODETIC LONGITUDE: **75 13 07.92898**      FEET

NAME OF STATION: **BOUNDARY MONUMENT 9**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 9**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NAME OF STATION: **BOUNDARY MONUMENT 9**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NAME OF STATION: **BOUNDARY MONUMENT 9**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

BOUNDARY MONUMENT 9

STATE: **Delaware**  
COUNTY: **Sussex**  
QUADANGLE NO.: **Q380752**  
YEAR: **1976**

DESCRIPTION OF TRIANGULATION STATION  
BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

The computed position of this monument was found to be in the edge of a road. Maryland and Delaware decided that it was the safest location in the area. Therefore, the monument was established at this date. The monument is located 1 mile east of Selbyville, 9 miles west of Fenwick Island and on road right-of-way. To reach from the intersection of U.S. Highway 113 and State Highway 54 in Selbyville, go east on State Highway 54 for 0.5 mile to a Y-T-intersection, turn right and go south on Main Street for 0.55 mile to a point where State Highway 54 turns left. Continue south and southeast on Main Street for 0.4 mile to the marker on the left. The surface marker is a Maryland-Delaware Boundary Diek stamped E-W NO. 9 1976, set in the top of a 10-inch round concrete monument which is 1-inch below the surface. The sub-surface marker is a National Geodetic Survey Triangulation Station Diek stamped E-W NO. 9 1976, set in an 8-inch mass of concrete 42 inches below the surface. They are 85 feet south of a private drive, 64 feet southwest of a powerline pole numbered 43, 48 feet northeast of a powerline pole numbered 44, 32 feet northeast of a field entrance, 15 feet south of the center of the road, and 1 foot west of a witness post. For additional information, see description for station CABE 1974.

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: NORMAN  
ESTABLISHED BY: C.D.M.  
RECOVERED BY: L.A. Lapine  
YEAR 1912 / STATE: Maryland-Delaware  
YEAR 1974 / COUNTY: Worcester-Sussex Line  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: In the south edge of Selbyville, Del.  
HEIGHT OF TELESCOPE ABOVE STATION MARK 102.7 feet.  
HEIGHT OF LIGHT ABOVE STATION MARK 111.2 feet.

DISTANCE AND DIRECTION TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
RM 6 (Az. Mk.)	S	0.15 mile	200	00 00.0
RM 4 (Tension 5 kgs.)	S	59.79	18.225	97 19 27.6
Azimuth mark	WNW	0.35 mile	173	00 39.7
RM 5 (Tension 5 kgs.)	W	96.26	29.340	202 09 02
RM 4 to RM 5	x	124.45	(37.932)	x

The station mark, reference mark 4, reference mark 5 and the azimuth mark were recovered and found to be in good condition. Reference mark 3 was searched for and is believed destroyed. Reference mark 6 was established at this time. It is believed reference mark 4 has been moved because a difference of 7.266 meters was found. Due to the change a new description follows.\*

The station is located in the south edge of Selbyville, Delaware, in the northeast angle of a crossroads at the Maryland-Delaware State line, on the property of Mr. William Penza, Selbyville, Delaware, phone 302-734-9770.\*

To reach the station from the post office in Selbyville, Delaware, go southwest on Church Street for 0.25 mile to a railroad crossing. Continue southwest on Church Street for 0.35 mile to the junction of US Highway 113. Turn left and go south on US Highway 113 for 0.25 mile to the Maryland-Delaware State Line and the station on the left.\*

To reach the azimuth mark from the station, go west on a paved road for 0.35 mile to the azimuth mark on the right.\*

To reach reference mark 6 from the station, go south on US Highway 113 for 0.15 mile to a white frame building on the right and the mark on the right.\*

The station mark, a standard disk stamped NORMAN 1932, is set in a hole in the top of a 6 by 12-inch granite boundary line monument that projects 20-inches above the ground surface. It is 123 feet northeast of the northeast corner of a concrete building, 78.5 feet east of a 12-inch maple tree and in the south edge of a cultivated field. (Deac.)\*

Reference mark 4, a standard disk stamped NORMAN NO 4 1932, is set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 136 feet north of the center of a paved road and 82 feet northeast of the northeast corner of the concrete building. (Note 11b)\*

Reference mark 5, a standard disk stamped NORMAN NO 5 1932, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 47 feet east-northeast of a powerline pole with a transformer, 28.7 feet northwest of a 12-inch maple tree and 10 feet west of the west edge of a cultivated field. (Note 11b)\*

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION NORMAN (BOUNDARY MONUMENT 10)

STATE DELAWARE - MARYLAND

YEAR 1932

FIRST OBSERVATION

SOURCE G-1895

GEODETIC LATITUDE	38 27 03.986	ELEVATION SCALED	11 METERS FEET
GEODETIC LONGITUDE	75 13 56.935		
STATE COORDINATES (FEET)			
STATE & ZONE	CODE	X	Y
MD	1900	1,306,168.26	229,878.23
DE	0700	552,749.67	164,330.39
			+ 1 06 34 + 0 06 52

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta \theta = \frac{1}{R} \sin \Delta \theta$  \* FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK	82 55 58.6	81 49 25	1900
AZIMUTH MARK	82 55 58.6	82 49 06	0700

Reference mark 6, a standard disk stamped NORMAN 1932 NO 6 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 51 feet west-southwest of a 40-inch oak tree and 39 feet east-southeast of a 40-inch oak tree. (Note 11b)\*

Azimuth mark, a standard disk stamped NORMAN 1955, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 48 feet north-northeast of a powerline pole number 20 G, 16 feet north of the center of a paved road and 4 feet south of a metal witness post with sign. (Note 16 b)\*

The boundary line monument the station mark is set in the top of 19 Boundary Line Monument 10.\*

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MDAA FORM 76-39  
118-704

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEOGRAPHIC SURVEY  
STATION

### DESCRIPTION OF TRIANGULATION STATION

**NAME OF STATION:**

11. **Delaware**

COUNTY: Sussex Worcester

YEAR: 1976  
DESCRIBED BY: R.O. Pount

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION      BOUNDARY MONUMENT 11

STATES:	DELAWARE - MARYLAND	YEAR	1976
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**SECOND ORDER**

NOTES.	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS.!	HEIGHT OF LIGHT ABOVE STATION MARK	METERS.
	SURFACE-STATION MARK.		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	UNDERGROUND-STATION MARK			

Source: C-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODESIC LATITUDE	38 27 04.57441	ELEVATION	12 METERS
GEODESIC LONGITUDE	75 15 12.19806	NO CHECK	FEET

### STAFF COORDINATOR (FTE)

STATE & ZONE	CODE	N	Y	$\theta$ (DEG) $\Delta$ (°) ANGLES *
RD	1900	1,300,180.84	229,822.50	+ 1 05 46
DE	0700	546,762.06	164,378.63	+ 0 06 06

• PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	OPTIC AXIS AZIMUTH (from nadir)	PLANE AZIMUTH* (from nadir)	CODE
	0 0 0 0	0 0 0 0	

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

### POSITION DETERMINED BY TRAVERSE FROM STATION DAVIS

The computed position of the boundary was found to be in a safe location. It was marked at this date.

The mark is located 1 mile west of Salbyville, 17 1/2 miles east of Dalmar and at a T-Intersection of the roads. The property is owned by Mr. Donald Hudson, Route 2, Salbyville, Delaware.

To reach from the intersection of U.S. Highway 113 and State Highway 54 in Selbyville, go south on State Highway 113 for 0.85 mile to a side road right at the state line. Turn right and go west on Morris Road for 1.25 miles to a side road right. Turn right and go north on a dirt road for 0.3 mile to a T-intersection and the mark on the left.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 11 1976, set in the top of a 20 x 30 inch mass of concrete which is 6 feet deep and it projects flush with the surface. It is 44 feet west of the center of the north-south road, 35 feet north of a witness post, 27 feet west-southwest of a culvert, 15.5 feet west of a 30-inch tra., 14 feet north of the center of the E-W road, and 1 foot east of a witness post.

For additional information, see description for Triangulation Station DAVIS 1974.



# HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 75-39  
112-708

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **BOUNDARY MONUMENT 12**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**  
STATE: **Delaware**  
COUNTY: **SUSSEX**  
QUAD/ANGLE NO.: **Q380752**  
YEAR: **1976**  
DESCRIBED BY: **R.G. Poust**

OBJECT	METERS, 1/2 WEIGHT OF LIGHT ABOVE STATION MARK		METERS.	
	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCE	BEARING	DIRECTION
SURFACE-STATION MARK				
UNDERGROUND-STATION MARK				
OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				

The computed position of this monument was found to be in a swamp. It was relocated to the east and in a much safer location. The mark is located 16 miles east of Delmar, 2 1/2 miles west of Selbyville, and about 2 miles south of State Highway 54. The property is owned by Mr. John R. Davis of Selbyville, Delaware. To reach from the intersection of U.S. Highway 113 and State Highway 54 in Selbyville, go west on State Highway for 0.2 mile to a side road. Turn left and go south on a paved road for 0.2 mile to a crossroads. Continue south on the paved road for 0.1 mile to a crossroad just north of a small bridge. Continue straight ahead and go southwest on the paved road crossing the bridge for 0.95 mile to a side road right. Turn right and go west on a dirt road for 0.7 mile to an old house. Bear left and go southwest across a cultivated field for 1/4 mile to the marker. The surface marker is a Maryland-Delaware Boundary Disk stamped E-W NO. 12 1976, set in the top of a 10-inch round concrete monument projecting 8-inches. It is 42 feet south of the south edge of the cultivated field, 21 feet south of a E-W ditch, 8 feet southwest of a 14-inch pine tree with a triangle blaze, and 2.6 feet north-northwest of a witness post. The sub-surface marker is a National Geodetic Survey Triangulation Station Disk set in an 8-inch mass of concrete 42 inches below the surface. For additional information, see description for station BRIAR 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 12**

STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SECOND - ORDER

SOURCE: G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 04.95382	ELEVATION	12 METERS
GEODETIC LONGITUDE:	75 16 01.64594	NO CHECK	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	S. OR Δ, S. ANGLE *
MD	1900	1,296,247.12	229,785.91	+ 1 05 15
DE	0700	562,828.21	164,410.33	+ 0 05 35

\* PLANE AZIMUTH WAS BEEN COMPUTED BY THE S. OR Δ, S. FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION BRIAR

HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **BOUNDARY MONUMENT 13**  
NEAREST TOWN: **Solbyville**  
CHIEF OF PARTY: **C.L. Novak**  
STATE: **Maryland**  
COUNTY: **Worcester**  
QUADRANGLE NO.: **Q380752**  
YEAR: **1976**  
DESCRIBED BY: **R.G. Pount**

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 13**

STATE: **DELAWARE** - **MARYLAND** YEAR: **1976**

SECOND - ORDER

SOURCE: **G-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 05.55946	ELEVATION:	11 METERS
GEODETIC LONGITUDE:	75 17 22.05500	NO CHECK	

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,289,850.36	229,726.53
DE	0700	536,431.26	164,461.99

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B = \text{UR} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION STEEN

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS.		HEIGHT OF LIGHT ABOVE STATION MARK		METERS.	
	SURFACE-STATION MARK		DISTANCES AND DIRECTIONS TO ATIMUTH MARK.		REFERENCE MARKS AND PERPENDICULAR		DIRECTIONS	
	UNDERGROUND-STATION MARK		DISTANCES WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE					
			FEET	METERS				





MAY 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
1-12-76

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: **BOUNDARY MONUMENT 15**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **C.L. Novak**  
STATE: **Delaware** COUNTY: **Worcester**  
QUADRANGLE NO.: **Q380752** DESCRIBED BY: **R.G. Poust**  
YEAR: **1976**

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 15**

STATE: **DELAWARE** - **MARYLAND** YEAR: **1976**

SECOND - ONCE

SOURCE: **C-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 06.66364	ELEVATION	11 METERS
GEODETIC LONGITUDE:	75 19 54.61840	NO CHECK	

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,217,713.62	229,613.63
DE	0700	524,294.16	184,559.73

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \theta$  FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION NECK

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK METERS; † HEIGHT OF LIGHT ABOVE STATION MARK METERS.	
SURFACE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION
UNDERGROUND STATION MARK	
OBJECT	BEARING DISTANCE DIRECTION

The computed position of this marker was found to be in a north-south road. It was relocated 26.73 feet to the west and out of traveled area of the road.

The mark is located in the north edge of the cypress swamp about 5 miles west of Selbyville, 1 1/2 miles east of the Bethel Church and on road right-of-way.

To reach from the intersection of U.S. Highway 113 and State Highway 54 in Selbyville, go south on U.S. Highway 113 for 0.85 mile to a side road right at the state line. Turn right and go west on Morris Road for 1.95 miles to a T-intersection. Turn right and go northwest on a paved road for 1.9 miles to a side road right. Turn right and go north on a dirt road for 0.7 mile to Monument number 14 on the right.

Continue northwest and southwest on the dirt road for 1.65 miles to a T-intersection in the cypress swamp. Turn right and go north on a dirt road for 0.6 mile to the marker on the left at the north edge of the swamp.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 15 1976, set in the top of a 10-inch round concrete monument projecting 6-inches. The sub-surface marker is a National Geodetic Survey Triangulation Station Disk stamped E-W NO. 15 1976, set in an 8-inch mass of concrete which is 42 inches below the surface. They are 28.75 feet west-northwest of a rock corner stone, 18 feet north of the north edge of a timbered swamp, 12 feet west-northwest of the center of the road, 9 feet north of a culvert, 8 feet east of a ditch, and 1.5 feet north of a witness post.

For additional information, see description for station NECK 1974.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 78-39  
112-70

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 17  
NEAREST TOWN: Selbyville  
CHIEF OF PARTY: C.L. Novak  
DATE: Delaware  
COUNTY: Sussex  
QUADRANGLE NO.: Q380752  
YEAR: 1976  
DESCRIBED BY: R.G. Poust

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
	SURFACE-STATION MARK			
	UNGROUND-STATION MARK			
OBJECT	DISTANCE	FEET	DISTANCE	FEET
BEARING	DIRECTION			

The computed position of the monument was found to be directly behind a large building. It was moved to the east and to a much better location. The mark is located 14 1/2 miles northeast of Salisbury, 8 miles west of Selbyville, and 11 1/2 miles east of Delmar, and on property owned by the Bethel United Methodist Church.

To reach from the intersection of U.S. Highway 13 and State Highway 54 in Delmar, go east on State Highway 54 for 9.1 miles to junction with State Highway 26. Continue east on state line road for 2.1 miles to a side road left and the marker on the left.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 17 1976, set in the top of a round concrete monument projecting 10-inches. The sub-surface marker is a standard National Geodetic Survey Triangulation Station Disk stamped E-W NO. 17 1976, set in the top of an 8-inch round mass of concrete which is 42-inches below the surface. They are 91.5 feet south of the southeast corner of the Bethel United Methodist Church, 86 feet north of the center of state line road, 44 feet west of the center of a paved road, 11 feet west of the center of a dirt road, and 2 feet southeast of a witness post. For additional information, see description for station BETHEL 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 17

STATE: DELAWARE - MARYLAND

YEAR: 1976

SECOND ORDER

SOURCE: G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 07.26642	ELEVATION	13 METERS
GEODETIC LONGITUDE	75 21 21.39733	NO CHECK	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	S - OR - Δ - S1 - ANGLE
MD	1900	1,270,810.22	229,549.36	+ 1 01 55
DE	0700	517,390.55	164,615.25	+ 0 02 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S - OR - Δ - S1 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from tape)	PLANE AZIMUTH (from tape)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION BETHEL







ADJUSTED HORIZONTAL CONTROL DATA

TRIANGULATION STATION Q380752 R

NAME OF STATION: BOUNDARY MONUMENT 20  
ESTABLISHED BY: Lewis A. Lapineyear: 1974 STATE: Md-Del Line BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles north of Pittssex  
HEIGHT OF TELESCOPE ABOVE STATION MARK FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	DISTANCE		DIRECTION
	FEET	METERS	
LINE 1932 (Traverse Distance)	W (33.93)	10.343	"

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

The monument is located about 4 miles north of Pittssex, Maryland, 3 miles southwest of Gumboro, Delaware, 1.4 miles southeast of Whitesville, Delaware.

To reach the monument from the Ayers Methodist Church in Pittssex, go north on State Road 353 for 4.0 miles to the junction with State Road 54 and the Maryland-Delaware State Line. Turn left and go west on State Road 54 for 1.0 mile to a sideroad right (OLD STATE LINE ROAD). Turn right and go north and westerly on a paved road for 0.2 mile to the mark on the left.

The mark, a 6 by 12 inch granite monument with a chiseled hole in the top and projects 36 inches above the ground surface. The monument is leaning to the south.

For additional information see description for triangulation station LINE 1932.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 20  
ESTABLISHED BY: YEAR, 1975 STATE: Md-Del Line BENCH MARKS ALSO ☐  
RECOVERED BY: C.L. Novak YEAR, 1976 COUNTY: Worcester-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles north of Pittssex

Detailed statement as to the fitness of the original description, including marks found, examples, changes made, and other pertinent facts:

The monument was recovered and found in good condition as previously described.

NAME OF STATION: BOUNDARY MONUMENT 20  
STATE: DELAWARE - MARYLAND YEAR: 1932  
SECOND-ORDER

SOURCE: G-15790  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: 38 27 08.72321	ELEVATION: 19.0 METERS
GEODETIC LONGITUDE: 75 25 02.22423	62 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD DE	1900 0700	1,253,243.73 499,823.05	229,386.25 164,756.89
			$\phi$ (UP $\Delta$ ) $\theta$ (ANGLE) °
			+ 0 59 36 - 0 00 01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S (UP  $\Delta$ )  $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (FROM MARK)	PLANE AZIMUTH (FROM MARK)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF JUN 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION LINE





HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NOAA FORM 76-39  
11-77

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **BOUNDARY MONUMENT**  
NEAREST TOWN: **Gumboro**  
CHIEF OF PARTY: **C.L. Novak**  
QUADRANGLE NO.: **Q380752**  
YEAR: **1976**  
DESCRIBED BY: **R.O. Poutat**

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 22**

STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SECOND ORDER

SOURCE: **C-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	38 27 11.29908	ELEVATION	NO CHECK	20 METERS
GEODETIC LONGITUDE:	75 27 16.99458			FEET

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
	SURFACE STATION MARK		OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	UNDERGROUND STATION MARK			
	OBJECT	BEARING	DISTANCE	DIRECTION
			FEET	
			METERS	

The computed position of this monument was found to be in the east-bound lane of State Highway 54. There is no way possible to move the point on line. The Maryland Highway Department set a manhole on the point and a standard monument was placed under the manhole. This monument is located about 4 1/2 miles north of Pittsville, Maryland, and 3 1/4 miles southwest of Gumboro, Delaware. To reach from the intersection of U.S. Highway 13 and State Highway 54 in Delmar, go east on State Highway 54 for 5.7 miles to the manhole and this monument. The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 22 1976, set in the top of a 12-inch round concrete monument which is 20-inches below the road surface. The sub-surface marker is a similar disk bearing the same stamping, set in an 8 by 12 inch mass of concrete 48 inches below the road surface. They are 30.8 feet north of a witness post, 30 feet north-northwest of a culvert at a woods road, and 4 feet south of the center of State Highway 54. For additional information, see description for station RACCOON 1974.

STATE COORDINATES (6611)			
STATE & ZONE	CODE	N	E
MD	1900	1,242,519.22	229,463.12
DE	0700	489,101.80	165,019.72

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from true)	PLANE AZIMUTH (from true)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION RACCOON

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
11-77

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **BOUNDARY MONUMENT 23, Delaware**

COUNTY: **Wicomico**

QUADRANGLE NO.: **Q380752**

YEAR: **1976**

DESCRIBED BY: **R.G. Poust**

HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
SURFACE STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK, AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
UNDERGROUND STATION MARK			
OBJECT	BEARING	DISTANCE	DIRECTION
		FEET	
		METERS	

The computed position of this marker was found to be in a safe location. It was marked at this date.

It is located 5 1/2 miles east of Delmar, 13 miles west of Selbyville, and on the south side of State Highway 54. The point is on road right-of-way.

To reach from the intersection of U.S. Highway 13 and State Highway 54 in Delmar, go east on State Highway 54 for 4.6 miles to the marker on the right.

The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 23 1976, set in the top of a 12-inch round concrete monument which is flush with the surface. The sub-surface marker is a National Geodetic Survey Triangulation Station Disk stamped E-W NO. 23 1976, set in the top of an 8-inch mass of concrete which is 42 inches below the surface. They are 59.26 feet south-southeast of MELSON RM 2 1974, 43.5 feet north of a 10-inch pine tree, 18.8 feet south of the center of State Highway 54, and 11.5 feet north of a witness post.

For additional information, see description for Triangulation Station MELSON 1974

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 23**

STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SECOND - ORDER

SOURCE: **C-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 12.64863	ELEVATION	19 METERS
GEODETIC LONGITUDE	75 28 28.54802	NO CHECK	FEET

STATE COORDINATES (FATH)			
STATE & ZONE	CODE	N	E
MD	1900	1,236,825.63	229,503.89
DE	0700	483,409.67	165,159.21
			+ 0 57 27
			- 0 02 10

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta$   $\theta$  FORMULA NEGLECTING THE SECOND TERM.

TORSTATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION MELSON

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
117-106

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY  
DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: **BOUNDARY MONUMENT 24**  
NEAREST TOWN: **Delmar**  
CHIEF OF PARTY: **C.L. Novak**  
QUADRANGLE NO.: **Q380752**  
STATE: **Maryland**  
COUNTY: **Sussex**  
YEAR: **1976**  
DESCRIBED BY: **R.G. Pouet**

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 24**

STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SECOND ORDER

SOURCE: **G-10742**

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 13.89795	ELEVATION	17 METERS
GEODETIC LONGITUDE	75 29 35.32947	NO CHECK	

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	$\theta$ OR $\Delta$ $\theta$ ANGLE
MD	1900	1,231,511.80	229,542.02	+ 0 56 45
DE	0700	478,097.20	165,289.46	- 0 02 51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION MORRIS

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
OBJECT	BEARING	FEET	DISTANCE	DIRECTIONS

The computed position of this monument was found to be in a safe location in the edge of State Highway 54. The mark is located 4 1/2 miles east of Delmar, 14 miles west of Salisbury and on Highway right-of-way. To reach from the intersection of U.S. Highway 13 and State Highway 54 in Delmar, go east on State Highway 54 for 3.6 miles to the marker on the right. The surface mark is a Maryland-Delaware Boundary Disk stamped E-W NO. 24 1976, set in the top of a 12-inch round concrete monument which is flush with the surface. The sub-surface disk is a National Geodetic Survey Triangulation Station Disk stamped E-W NO. 24 1976, set in an 8-inch mass of concrete 42 inches below the surface. They are 68.92 feet northwest of MORRIS RM 1 1974; 60 feet northeast of the northwest edge of wood line, 53.68 feet northeast of MORRIS RM 2 1974, 22 feet south of the center of State Highway 54, 10 feet north-northwest of powerline pole numbered 38A, and 9.6 feet north-northwest of a witness post. For additional information, see description for station MORRIS 1974.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 25  
STATE: DELAWARE - MARYLAND YEAR: 1976  
SOURCE: G-15790 SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 15.00683	ELEVATION	16.4 METERS
GEODETIC LONGITUDE	75 30 35.11330		54 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CONE	N	E
MD	1900	1,226,754.82	229,576.12
DE	0700	473,341.43	165,406.01
			0 56 07
			- 0 03 28

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta A = \text{FORMULA DETERMINING THE SECOND TERM}$

TO STATION OR OBJECT		GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CHIEF
TOWNSEND	111 21 21.0	111 21 21.0	110 25 14	1900
	111 21 21.0	111 21 21.0	111 24 49	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

POSITION DETERMINED BY TRAVERSE FROM STATION TOWNSEND

## TRIANGULATION STATION Q380753

NAME OF STATION: BOUNDARY MONUMENT 25  
ESTABLISHED BY: Louis A. Lepore, 1974  
YEAR: 1974  
STATE: Md-Del Line  
COUNTY: Sussex or Wilcomico  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: Delmar, Delaware  
HEIGHT OF TELESCOPE ABOVE STATION MARK: FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	DISTANCE		DIRECTION
	FEET	METERS	
TOWNSEND (Electronic Distance)	WNW (207.90)	63.370	"

The monument is located about 5.0 miles northwest of Parsonsburg, Maryland, 3.1 miles east of Delmar, 2.6 miles southwest of Ward, Delaware and on road right-of-way.

To reach the monument from the junction of U.S. Highway 13 and State Road 54 at the east edge of Delmar, go east on State Road 54 for 2.3 miles to the monument on the right.

The mark is an iron pin set in an irregular mass of concrete in the center of a manhole and is 18 inches below the ground surface. It is 13.8 feet north of BOUNDARY MONUMENT 25 OFFSET.

During highway construction in the 1950's, the original 1751 boundary monument was reset 13.8 feet to the south. The reset monument has been identified in the descriptive information as BOUNDARY MONUMENT 25 OFFSET.

The iron pin mentioned above was set by the highway department in the same position as the original site of the 1751 monument.

For additional information see description for triangulation station TOWNSEND.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 25  
ESTABLISHED BY: C.L. Novak  
YEAR: 1976  
STATE: Md-Del Line  
COUNTY: Wilcomico-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 1/2 miles east of Delmar

Detailed statement as to the fitness of the original description; includes marks found, samples, changes made, and other pertinent facts

The monument was recovered and found in good condition as previously described.



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Boundary Monument 25 OFFSET

CHIEF OF PARTY: L.A. Lapine      YEAR: 1974      STATE: Md-Del      COUNTY: Wicomico-Sussex

Description, including sketch of object:

Boundary Monument 25 Offset is a 6x10-inch granite monument that projects 2 feet above the ground surface. It is 22.8 feet S of the center line of State Road 54 and 13.8 feet S of Boundary Monument 25. For additional information see description for TRANSFER 1974.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 25 OFFSET

STATE: DELAWARE - MARYLAND      YEAR: 1974      SECOND - ORDER

SOURCE: G-15790

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 14.87209	ELEVATION	17 METERS
GEODETIC LONGITUDE	75 30 35.11338	NO CHECK	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,226,755.03	229,562.49
DE	0700	473,341.41	165,392.38

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  COS  $\Delta$  S1 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

POSITION DETERMINED BY TRAVERSE FROM STATION TOWNSEND

# HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 26 STATE: Maryland COUNTY: Sussex  
NEAREST TOWN: DELMAR QUADRANGLE NO.: 380753  
CHIEF OF PARTY: C. L. Novak YEAR: 1981 DESCRIBED BY: R. G. FNUST

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	1.5 METERS, 1	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
	SURFACE-STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	UNGROUND-STATION MARK			
	OBJECT	BEARING	FEET	METERS
				DIRECTION
	ANDREWS 1974		10.373	181 57 28 *
				* Geodetic azimuth.

The monument is located about 16 airline miles west of Selbyville, 2-1/2 miles east of Delmar and on State Highway 54 right-of-way.  
To reach from the intersection of U.S. Highway 13 and State Highway 54 in Delmar, go east on State Highway 54 for 1.5 miles to the monument on the right.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 26 1981, set in the top of a 14-inch square concrete monument which is 17-inches below the road surface. The sub-surface marker is a National Geodetic Survey Horizontal Control Station Disk stamped E-W NO. 26 1981, set in an 8-inch mass of concrete 4.7 feet below the surface of the road. They are below a 26-inch round sanitary sewer manhole cover, 146.4 feet north-northwest of the northwest corner of Mr. R. F. Bennett's home, 36.2 feet south of a telephone pole numbered 65, 36.0 feet south of a witness post, 26.5 feet north-northeast of a powerline pole numbered 48842 96382 48 B 15 and 7.7 feet south of the center of State Highway 54.

For additional information, see description of station ANDREWS 1974.  
Station E-W No. 26, established on line between Boundary Monuments 25 and 35 in 1976, was disturbed by farm machinery and the station was destroyed in 1981.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 26  
STATE: DELAWARE-MARYLAND  
YEAR: 1981

SECOND ORDER

SOURCE: G-16489

### NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 17.07006	ELEVATION	13.3 METERS
GEODETIC LONGITUDE	75 31 51.25067		50 FEET

STATE COORDINATES (FEET)				
STATE & ZONE	CODE	X	Y	# ON $\Delta$ & ANGLES *
MD	1900	1,220,695.57	229,686.64	+ 0 55 19
DE	0700	467,284.89	165,621.55	- 0 04 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (GHA)  $\theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From back)	PLANE AZIMUTH (From back)	CODE

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

### DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 27  
 NEAREST TOWN: Delmar  
 CHIEF OF PARTY: C. L. Nuvak  
 STATE: Maryland  
 COUNTY: Sussex  
 QUADRANGLE NO.: 380753  
 YEAR: 1981  
 DESCRIBED BY: R. G. Poust  
 Wilcomico

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK.	SURFACE-STATION MARK.	UNDERGROUND-STATION MARK.	OBJECT.	BEARING.		DISTANCE.		DIRECTION.	METERS.
					FEET.	METERS.	FEET.	METERS.		
		MAVER 1974					10.876	1	56	52 A
		E-W No. 27 1976-1981					22.684	182	30	14 A

A Geodetic azimuth.

Detailed description:

The monument is located about 17 airline miles west of Selbyville, 7 miles north of Salisbury and 1-1/2 miles east of Delmar. It is on State Highway 54 right-of-way.

To reach from the intersection of U.S. Highway 13 and State Highway 54 in the east part of Delmar, go east on State Highway 54 for 0.45 mile to the monument on the left.

The surface marker is a standard Maryland-Delaware boundary disk stamped E-W No. 27 1981, set in the top of a 14-inch square concrete monument which is 17 inches below the surface of the shoulder of the road. The sub-surface marker is a standard National Geodetic Survey Triangulation Station Disk stamped E-W No. 27 1981, set in the top of an 8-inch mass of concrete which is 4.5 feet below the surface of the shoulder of the road. They are covered with a sanitary sewer manhole which is 26-inches in size, 80.5 feet south of the southeast corner of Mr. Maurice F. Adkin's home, 51.5 feet northwest of a powerline pole numbered 428295 96404 35, 51.1 feet northwest of a witness post, 14.2 feet north of the center of State Highway 43 and 10.5 feet west of the center of a drive leading to Mr. Adkin's home.

For additional information, see the description of triangulation station WAYER 1974.

E-W No. 27 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	YEAR	ORDER
STATE DELAWARE-MARYLAND	27	1981	SECOND

**SOURCE. G-16489**

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE  
GEODETIC LONGITUDE

ELEVATION

15 1334

STATE COORDINATES (Fez)					
STATE & ZONE	CODE	K	Y	# CH Δ	# ANGLE *
MD	1900	1,215,160.99	229,787.61	+ 0 54 36	59
DE	0700	461,752.78	165,818.43	- 0 04 59	59

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	+

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 28 STATE: Maryland VICINITY: C. L. Novak  
NEAREST TOWN: DELMAR COUNTY: SUBURB QUADANGLE NO.: 380753  
CHIEF OF PARTY: C. L. Novak YEAR: 1981 DESCRIBED BY: R. G. POUST

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS.1 HEIGHT OF LIGHT ABOVE STATION MARK METERS	
SURFACE-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION
UNDERGROUND-STATION MARK	BEARING DEGREE DISTANCE FEET DIRECTION
FREEDOM 1976 E-W No. 28 1976-1981	7.811 181 56 52 ° 35.394 173 48 40 ° Geodetic azimuth.

The monument is located about 18 miles west of Selbyville, 7 miles north of Salisbury and 1/2 mile east of the center of Delmar. It is on State Highway 54 right-of-way and just south of the town park.

To reach from a point where State Highway 54 crosses a railroad in Delmar, go east on State Highway 54 for 0.45 mile to the marker in the center of the road. The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 28 1981, set in the top of an 11-inch square concrete monument which is 1.1 feet below the road surface. The sub-surface mark is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-W No. 28 1981, set in the top of a 12-inch square concrete post which is 6-inches thick and 3.6 feet below the surface of the road. They are below a 24-inch round Maryland State Highway Administration manhole with SIA inscribed on the lid, 51.7 feet south-southeast of a granite monument marking the town park, 42.1 feet north of the northeast corner of house numbered 416, 21.8 feet south of a 16-inch pine tree, 17.9 feet north-northwest of a powerline pole numbered 47661 96434 and 2.3 feet north of the center line of State Highway 54.

For additional information, see the description of station FREEDOM 1974.  
E-W No. 28 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

Detailed description:

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 28

STATE DELAWARE-MARYLAND YEAR 1981

SECOND ORDER

SOURCE C-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 21.06031	ELEVATION	15.4 METERS
GEODETIC LONGITUDE	75 34 19.96432		50 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,208,860.75	229,902.54
DE	0700	455,455.36	166,042.53

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta \theta = \frac{\Delta Y}{\Delta X}$  FORMULA SELECTED IN THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE



## HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

### DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 29  
STATE, Delaware  
COUNTY: Sussex  
Wicomico  
Nearest town: Delmar  
QUAD/ANGLE NO.: 380753  
YEAR: 1981  
DESIGNED BY: R.C.

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK	1.5 METERS.	HEIGHT OF LIGHT ABOVE STATION MARK	METERS.
SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO A ZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
DELMAR RM 4, 1974 E-W No. 29 1976-1981		97.010**	146	58
		41.593	185	16

\* Geodetic azimuth.  
\*\* Computed distance.

The monument is located about 7-1/4 miles north-northwest of Salisbury and 1/4 mile west of Delmar.

To reach from Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and go west on Waller Road for 0.05 mile to the marker on the right, behind a liquor store.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 29 1981, set in the top of a 14-inch round concrete monument which is flush with the surface. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Disk stamped E-W NO. 29 1981, set in the top of an 8-inch mass of concrete which is 3.4 feet below the surface. They are 106 feet south of the center of State Highway 54, 41.1 feet south of the northeast corner of the liquor store, 32.5 feet north of the center of Waller Road, 21.4 feet west of the southwest corner of the liquor store, 18.5 feet northeast of the north end of a 16-inch culvert and 13.8 feet east-southeast of a powerline pole numbered 47328 96450.

For additional information see the description of station DELMAR NM 4 1974. E-W NO. 29 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	YEAR	1981
STATE	DELAWARE-MARYLAND		

NO OBSERVATIONAL CHECK ON THIS POSITION

	°	'	"	ELEVATION	15.2 METERS	50 FEET
GEOGRAPHIC LATITUDE	38	27	22.18156			
GEOGRAPHIC LONGITUDE	75	35	02.10448			

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	$\kappa$	$\gamma$	$\theta = \sin^{-1} \Delta \phi$ , ANGLE *
MD	1900	1,205,507.25	229,963.74	+ 0 53 20
DE	0700	452,103.35	166,161.83	- 0 06 14

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA  $\Delta \alpha = \Delta \alpha' \cos \Delta \delta$  FOR THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
	0	0	0

HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION, BOUNDARY MONUMENT 30 STATE, Delaware  
NEAREST TOWN, Delmar QUADRANGLE NO.: 380753  
CHIEF OF PARTY: C.L. Novak DESCRIBED BY: R.G. Poust

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
E-W No. 30 1976-1981 CONNELLY 2 1981		55.812**	160 29 18 *	"
		6.476	202 53 41 *	"

NOTE: \* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 1.5 METERS; DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION.

The site of this monument was selected and temporarily marked during a joint meeting between the National Geodetic Survey, the State of Maryland, and the State of Delaware on August 26, 1980. It was agreed that the Monument No. 30 should be placed in the south edge of an east-west paved road and covered with a steel manhole. The temporary point was marked and referenced on August 26, 1980, and a permanent monument was established on June 24, 1981, as described in this text.

The monument is located about 7-1/2 miles north-northwest of Salisbury, 1-1/4 miles west of Delmar and 1/2 mile south of State Highway 54. It is on road right-of-way. To reach from a point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and continue west on Waller Road for 0.35 mile to a fork. Keep right and continue west on a paved road for 0.75 mile to the monument on the left.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 30 1981, set in the top of a 14-inch square concrete monument which is 20-inches below the road surface. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-W NO. 30 1981, set in the top of an 8-inch mass of concrete which is 4.6 feet below the surface of the road. They are covered with a 26-inch steel manhole with "SANITARY SEWER" inscribed on the top of the cover. They are 63.3 feet west of the west end of a 48-inch culvert along the south side of the road, 34.8 feet south-southwest of a 16-inch oak tree with a triangular blaze, 25.4 feet south-southwest of a witness post, 10.6 feet north-northwest of another witness post, 9 feet south of the center of the road and 7.9 feet north of a power-line pole numbered 46798 96468.

For additional information see the description of station CONNELLY 2.

E-W No. 30 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION, BOUNDARY MONUMENT 30

STATE DELAWARE-MARYLAND

YEAR 1981

SECOND ORDER A

SOURCE G-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 23.92563	ELEVATION	13.5 METERS
GEODETIC LONGITUDE	75 36 07.99844		44 FEET

STATE COORDINATES (1981)

STATE & ZONE	CODE	X	Y	# 100' Δ N. ANGLE *
MD	1900	1,200,263.49	230,059.37	+ 0 52 38
DE	0700	446,861.92	166,348.30	- 0 06 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\theta$  41 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		PLANE AZIMUTH (From north)		CLOSE

# HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 31 STATE: DELAWARE COUNTY: SHELBY  
NEAREST TOWN: Delmar DISTRICT NO.: 380753  
CHIEF OF PARTY: C.L. NOVAK DESCRIBED BY: R.C. POUST  
YEAR: 1981

OBJECT	BEARING	DISTANCE		DIRECTION	METERS
		FEET	METERS		
HURLEY 1974 E-W No. 31 1976-1981			10.986 40.462	2 39 188 51	40* 19*

NOTE: \* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS; 1 WEIGHT OF LIGHT ABOVE STATION MARK METERS

SURFACE STATION MARK: DISTANCE AND DIRECTION TO ADJUTANT MARK: REFERENCE MARK: BOUNDARY MONUMENT

UNDERSTANDING STATION MARK: SUBJECTS UNDER CONSIDERATION: BOUNDARY MONUMENT

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 31

STATE: DELAWARE-MARYLAND

YEAR: 1981

SECOND UNDER

SOURCE C-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 26.62809	ELEVATION	14 METERS
GEODETIC LONGITUDE	75 37 22.12816	NO CHECK	FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	K	Y	# OF UNITS IN SCALE
MD	1900	1,194,363.27	230,243.10	+ 0 51 52
DE	0700	440,965.64	166,634.22	- 0 07 42

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF UNITS IN FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From true)	PLANE AZIMUTH (From true)	CODE

The monument is located about 7 airline miles northwest of Salisbury, 4-1/2 miles northeast of Hebron and 2-1/4 miles west of Delmar. It is on the north edge of road right-of-way.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 31 1981, set in the top of an 11-inch square concrete monument which projects 15 inches. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-W NO. 31 1981, set in the top of an 8-inch mass of concrete which is 4.5 feet below the surface. They are 18.5 feet west of the north end of a 24-inch culvert, 17.8 feet north of the center of the road, 1.5 feet south of a witness post and 2 feet north of a ditch.

To reach from a point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and continue west on Hallor Road for 0.35 mile to a fork. Keep right and continue west on a paved road for 1.7 miles to the marker on the right, just west on a small wooded area.

For additional information, see the description of station HURLEY 1974.

E-W No. 31 is a standard National Geodetic Survey disk which was set on line

between Boundary Monuments 25 and 35 in 1976-1981.

Detailed description:

## HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 32  
NEAREST TOWN: Hebron  
CHIEF OF PARTY: C.L. Novak  
STATE: Delaware  
COUNTY: Wicomico  
QUADRANGLE NO.: 380753  
YEAR: 1981  
DESCRIBED BY: R.G. Poulse

NOTE *	HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS.1		HEIGHT OF LIGHT ABOVE STATION MARK METERS.	
	SURFACE-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK. REFERENCE MARKS AND MONUMENT		METERS.
	UNDERGROUND-STATION MARK	OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
	OBJECT	BEARING	DISTANCE	DIRECTION
			FEET	
	DUMP 1974			
	E-H No. 32 1976-1981			

The computed site of this monument was found to be in the edge of a water filled area. A new point was selected on the boundary and on line between stations DUMP 1974 and E-H No. 32, 1976-1981.

The monument is located 3-1/2 miles west of Delmar, 3-1/2 miles north of Hebron and in the northwest edge of the Wicomico County Sanitary Land Fill complex.

To reach from a point where State Highway 54 crosses the railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and continue west on Waller Road for 0.35 mile to a fork. Keep left and follow Waller Road southwest and west for 3.6 miles to a side road right and a gate on the right. Turn right and go north on a sand road picking way through the dump for 0.3 mile to the most northwest corner of the dump and the monument in a wooded area which separates the dump from cultivated fields.

The surface marker is a standard Maryland-Delaware boundary disk stamped E-H NO. 32 1981, set in the top of a 10-inch round concrete monument which projects 4-inches. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-H NO. 32 1981, set in a 6-inch mass of concrete which is 3.2 feet below the surface. They are 44 feet north of the center of a dim east-west sand road, 25 feet west of the west edge of a water filled swamp, 24.0 feet west-northwest of a 6-inch square concrete boundary marker for the dump and 2.5 feet east of a witness post.

For additional information see the description of station DUMP 1974.

E-H No. 32 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 32

STATE DELAWARE-MARYLAND

YEAR 1981

SECOND ORDER

SOURCE G-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 29.96802	ELEVATION	12.8 METERS
GEODETIC LONGITUDE	75 38 54.25873		42 FEET

STATE COORDINATES (FZII)				
STATE & ZONE	CODE	X	Y	# OF ANGLES *
MD	1900	1,187,030.48	230,471.40	+ 0 50 54
DE	0700	433,637.73	166,989.50	- 0 08 39

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  UR  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From north)	CODE



HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

By the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

ADJUSTED HORIZONTAL CONTROL DATA

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 33 STATE: Maryland COUNTY: Sussex  
NEAREST TOWN: Delmar QUAD: 1801 E. 11. 380753  
CHIEF OF PARTY: C. L. Novak DESCRIBED BY: R. G. Poust  
YEAR: 1981

NAME OF STATION BOUNDARY MONUMENT 33

SECOND ORDER

YEAR 1981

STATE MARYLAND-DELAWARE

SOURCE G-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 31.87467	ELEVATION	11.7 METERS
GEODETIC LONGITUDE	75 39 47.10929		38 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (From north)	COUL
MD	1900	1,182,824.12	230,602.35	+ 0 50 21	
DE	0700	429,434.17	167,193.30	- 0 09 12	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COUL

OBJECT	BEARING	FEET	METERS	DIRECTION	METERS
BRADLEY 1974 E-W No. 33 1976-1981		10.032	74	07	52 A
		29.219	128	54	27 *

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS; HEIGHT OF LIGHT ABOVE STATION MARK METERS  
SURFACE-STATION MARK DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT  
UNDERGROUND STATION MARKS OBJECTS WHICH CAN BE SEEN FROM THE STATION

The computed site of this Boundary Monument was found to be in a cultivated field. The States of Maryland and Delaware agreed that the monument would be in a much safer location if it was placed under a manhole in the west part of Spring Hill Lane.  
The monument is located about 3 miles north of Hebron and 4-1/2 miles west of Delmar. It is on road right-of-way.

To reach from a point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and continue west on Waller Road for 0.35 mile to a fork. Keep left and follow Waller Road southwest and west for 4.5 miles to a T-intersection and azimuth mark on the left. Turn right and go north on Spring Hill Lane for 0.3 mile to the monument on the left.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 33 1981, set in the top of a 11-1/2-inch square concrete monument which is 13-inches below the surface of Spring Hill Lane. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-W NO. 33 1981, set in the top of a 12-inch square block of cement which is 4.5 feet below the surface of the road. They are below a 26-inch round Maryland State Highway Administration manhole with "SHA" inscribed on the top of the cover, 94.0 feet northeast of the northeast corner of a house owned by Mrs. Myra Bradley, 44 feet north of the center of a drive leading to Mrs. Bradley's house, 38.5 feet northeast of a powerline pole numbered 45058 96562 D9 22 and 7.5 feet west of the center of Spring Hill Lane.

For additional information, see the description of Station BRADLEY 1974.  
E-W No. 33 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

Detailed description:

## HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 34  
STATE: Maryland  
COUNTY: Sussex  
QUAD: 180753  
YEAR: 1981  
DESCRIBED BY: R. G. POULSE

NOTE: SURFACE STATION MARK	HEIGHT OF TELESCOPE ABOVE STATION MARK	1.5 METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
BOUNDARY MONUMENT 34				
OBJECT WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
BLACKWATER 1974 (EDM)	424.282	134	03	31.6*
E-W No. 34 1976-1981	8.447	182	37	55 *
				* Geodetic azimuth

The monument is located 5-1/2 miles west of Delmar, 1 mile east of the Maryland-Delaware Corner Stone and on Property owned by Mr. Robert L. Trader, Route 2, Delmar, Delaware. Telephone number (302) 846-2466.

To reach from the point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 5.35 miles to a fork. Keep left and continue west on State Highway 54 for 0.6 mile to a private drive on the left and station BLACKWATER 1974 on the left. Turn left and go south on the private drive for 0.15 mile to a T-intersection just after passing Mr. Trader's barn. Turn left and go east on a field road for 0.2 mile to a north-south ditch and a double highline pole on the left (Numbered DVD 61). Turn right and go south along the west side of the ditch on a field road for 0.05 mile to a large culvert on the left and the marker on the left.

The surface marker is a standard Maryland-Delaware Boundary Disk stamped E-W NO. 34 1981, set in the top of a 10-inch round concrete monument which is flush with the surface. The sub-surface marker is a standard National Geodetic Survey Horizontal Control Station Disk stamped E-W NO. 34 1981, set in the top of a 6-inch mass of concrete which is 3.1 feet below the surface of the ground. They are 26.5 feet south of a witness post, 15.3 feet northwest of the center of the south end of the large culvert, 15 feet east of the center of the field road, 12.8 feet south of a 30-inch tree with a triangular blaze on the northwest side, 4 feet north of the center of a field road leading east across the culvert and in the east edge of a cultivated field.

For additional information, see the description of station BLACKWATER 1974. E-W No. 34 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 34

STATE DELAWARE-MARYLAND

YEAR 1981

SECOND - UNUS

SOURCE G-16489

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	38 27 31.94067	ELEVATION	10.9 METERS
GEODETIC LONGITUDE	75 40 44.59246		36 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	COORD	X	Y	P (UTM & 10° ANGLES)
MD	1900	1,178,249.13	230,744.76	+ 0 49 45
DE	0700	424,862.21	167,414.92	- 0 09 48

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 101 &amp; #1 FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COORD
BLACKWATER 1974	134 03 31.6	133 13 46	1900
BLACKWATER 1974	134 03 31.6	134 13 19	0700

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (Boundary Monument 0)

ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Delaware-Maryland  
RECOVERED BY: R.M.T. YEAR: 1962 COUNTY: Wilcomico-Sussex

HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 31 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Azimuth Mark	S	74.935	22.840	00 00 00.0
Reference Mark # 2	SW	179.035	54.569	96 21 34.7
Reference Mark # 3	W	(30.876)	9.411	156 51 42.4
MD-DEL CORNER RM 4		156.39	47.667	188 10 32.7
R.H. CORNER # 3				

Station mark, Reference mark 2 and 3 were recovered and found in good condition. The Azimuth mark was recovered and found to have been hit by road machinery and the disk had been knocked out. The above observations were made by placing another disk in the hole to hold the old point. This Azimuth mark was replaced by a new mark to MD-DEL CORNER RM 4, as the old station can never be occupied again due to shelter erected over the monument and station. The new distance and directions checked with the previous data. Reference mark 2 has been covered over by fill it is about 12 inches below the surface of the ground.

The station is the U.S.C.&G.S. disk set in the top and the approximate center of the monument. It is located about 6 1/2 miles east of Delmar, 6.0 miles south of Sharptown and 3 1/2 miles west of Mardela Springs, Maryland and on property owned by the states. It is a sand stone monument with the coat of arms on all four sides of the monument, it projects about 30 inches above the surface of the ground, the disk is etamped MD DEL CORNER 1932, is leaning to the south and has concrete poured around the base to insure the permanency of the monument. It has a 12 x 12 foot shelter erected over the monument. It is 101.0 feet north of the approximate center of state highway 467. The shelter has four 12 x 12 inch square red brick columns and has a conical elaped roof painted black and white.

A traverse connection was made to triangulation MD DEL CORNER RM 4, distance being (30.876 feet) and 9.411 meters east of station MD DEL CORNER RM 4.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (BOUNDARY MONUMENT 0)

ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Md-Del Line BENCH MARK ALSO ☐  
RECOVERED BY: Lewis A Lapine YEAR: 1974 COUNTY: Wilcomico or Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN 6 miles west of Delmar, Delaware.  
HEIGHT OF TELESCOPE ABOVE STATION MARK FEET

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
MD DEL CORNER 1932 RM 4 (Traverse Distance)	W	(30.87)	9.411	"

The monument is located about 6.0 miles west of Delmar and at the southwest corner of Delaware and at the south end of the north and south line between Delaware-Maryland.

The mark, a sand stone monument with the coat of arms on the north and south sides of the monument and also on the east and west side. It has a U.S.C.&G.S. triangulation disk cemented in the top, stamped MD DEL CORNER 1932. The monument is broke at the base and leaning to the south. It has a 12 by 12 foot shelter erected over the monument.

This party has no data on the monuments that are established to the north of BOUNDARY MONUMENT 0. They are two small monuments that project 2 feet above the ground surface. One monument is 3.8 feet north and the other monument is 2.8 feet north-northeast.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MD DEL CORNER BDRY MONUMENT 0 = MIDDLE POINT \*

STATE: DELAWARE - MARYLAND YEAR: 1932 SECOND ORDER

SOURCE: G-12731 \* BDRY MON 35 (East-West Boundary)  
\* BDRY MON 0 (North-South Boundary)

GEODETIC LATITUDE GEODETIC LONGITUDE	0 1 2		ELEVATION SCALED	11 METERS FEET
38 27 35.8698 75 41 38.4554				

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	420,578.26	167,622.63
MD	1900	1,173,962.32	230,878.25

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta_{OD} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODESIC AZIMUTH (from north)		PLANE AZIMUTH* (from north)		CODE
AZ MK RM 1		261	37 52.0	261	48 13	0700
AM MK RM 1		261	37 52.0	260	48 41	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (BOUNDARY MONUMENT 0)

ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Md-Del. Line BENCH MARK ALSO ☐  
RECOVERED BY: Lewis A. Lapine YEAR: 1974 COUNTY: Wilcomico-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles west of Delmar, Delaware  
HEIGHT OF TELESCOPE ABOVE STATION MARK 4 FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Azimuth Mark	W	0.3	mile	0 00 00.00
MD DEL CORNER 1932 RM 4 (Trav. Dist)	W	(30.87)	9.411	10 23 11.9
RM 2	S	74.97	22.850	278 33 51.3
RM 3	SW	179.04	(54.571)	339 04 12.6
RM 2 to RM 3		156.30	(47.640)	

The station mark was recovered and found to be leaning to the south, reference marks 2,3 and the azimuth mark were recovered and found in good condition as described in 1962.

The station mark, a standard disk stamped MD DEL CORNER 1932, is cemented in a drill hole in the top of Boundary Monument Number 0 or 35-B that projects 30 inches above the ground surface. It has a 12 foot shelter erected over the monument. It is 2.8 feet south of Monument 35-A, which was established in 1760.

No data available to check the horizontal directions or distance to the marks.

For additional information see description MD DEL CORNER 1932 RM 4.



## HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

By the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: ANDREWS STATE: Delaware COUNTY: Sussex  
NEAREST TOWN: Delmar, Delaware QUADRANGLE NO.: 380753  
CHIEF OF PARTY: Lewis A. Lapine YEAR: 1974 DESCRIBED BY: R.K. Moore

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.66 METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.	OBJECT	BEARING	FEET	METERS	DIRECTION
1b SURFACE STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	7a				
11b RM 3 (Az. Mk.) (Electronic Dist.)	E	700.764	0 00	00.00	
11b RM 1	SE	81.95	24.976	36 02	14
11b RM 2	SSW	70.63	21.525	122 35	09
		104.83	(31.952)		

The station is located about 3.6 miles southwest of Ward, Delaware, 2.4 miles east of Delmar and on road right-of-way, S. Highway 13 and State Road 54 in the east edge of Delmar, go east on State Road 54 for 1.3 miles to powerline pole number 65 and the station on the left, continue east on State Road 54 for 0.4 mile to a side road right and RM 3 (Az. Mk.) on the right.

Station marks are standard disks stamped ANDREWS 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 26 feet north of the centerline of State Road 54 and 5 feet east-southeast of powerline pole number 65. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped ANDREWS NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 23 feet south of the centerline of State Road 54 and 5 feet north of a drainage ditch.

Reference mark 2, a standard disk stamped ANDREWS NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 32 feet south of the centerline of State Road 54 and 3 feet east of powerline pole number 488.

Reference mark 3, a standard disk stamped ANDREWS NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 53 feet east of the center of a paved road, 27 feet south of the centerline of State Road 54, 8 feet northwest of powerline pole number 488-10 and 4 feet east-southeast NELSON ROAD sign. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: ANDREWS YEAR: 1974 STATE: Delaware BENCH MARK ALSO ☐  
ESTABLISHED BY: L.A.L. YEAR: 1981 COUNTY: Sussex  
RECOVERED BY: C.L. Nuvak  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2.5 miles east of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	FEET	METERS	DIRECTION
ANDREWS RM 3 (AZ MK) 1974	E	(0.45 m11b)	24.957	36 02' 00"
RM 1	SE	81.88	24.976	36 02' 45"
Boundary Monument 26	S	34.03	10.373	88 43' 39.5"
RM 2	SSW	70.57	21.510	122 34' 36"

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ANDREWS

STATE: DELAWARE

YEAR: 1974

SECOND ORDER

SOURCE: C-15790

GEODETIC LATITUDE	38 27 17.40627	ELEVATION	15.4 METERS
GEODETIC LONGITUDE	75 31 51.23605		51 FEET

## STATE COORDINATES (FATH)

STATE & ZONE	CODE	X	Y	PL. CORR. AT ANGLE
DE	0700	467,286.10	165,655.56	- 0 04 16
MD	1900	1,220,696.18	229,720.66	+ 0 55 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \sin^{-1} \frac{Y}{X}$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
ANDREWS RM 3	273 13 49.5	273 18 05	0700
ANDREWS RM 3	273 13 49.5	272 18 30	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station mark and all reference marks were recovered as described and found in good condition. Boundary Monument 26 was set on this date. For additional information, see the description of Boundary Monument 26.

E-W No. 26, set on line between Boundary Monuments 25 and 35 in 1976, had been disturbed by farm machinery and this station was destroyed.

Additional measured distances:

	meters	feet
BDRY. MON. 26 to RM 1	20.411	66.97
BDRY. MON. 26 to RM 2	14.133	46.37
RM 1 to RM 2	31.949	104.83



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
(12-76)  
(FORMERLY CGS FORM 931)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION **BETHEL**  
NEAREST TOWN **Gumboro**  
CHIEF OF PARTY **Lewis A. Lapine**  
STATE **Del.** Line **County: Sussex Del.**  
QUADRANGLE NO. **380752** DESCRIBED BY: **A. G. Thacker**  
YEAR: **1974**

10 11b 11b 11b	SURFACE STATION MARK UNDERGROUND STATION MARK	OBJECT	BEARING	DISTANCE		DIRECTION
				FEET	METERS	
	RM 3 (Az. Mk.) (Electronic Dist.)		W	3506.77	1068.878	0 00 00.00
	RM 1		SE	126.81	38.652	239 11 47.0
	RM 2		SW	91.30	27.831	314 29 43.2

No measurement was made from RM 1 to RM 2 due to a house on line.  
The station is located about 5 miles northeast of Pittsville, Maryland, 5 miles northwest of Whaleyville, Maryland and 2 miles southeast of Gumboro, Delaware, on property owned by the Bethel United Methodist Church.

To reach the station from the Ayers Methodist Church in Pittsville, Maryland, go north on State Road 353 for 4.0 miles to a crossroad at the Maryland-Delaware State Line and the junction with Maryland State Road 54, turn right and go east on a paved road for 1.35 miles to a crossroad and Reference Mark 3 on the left. Continue east on the paved road for 0.7 mile to a slide road on the left, turn left and go north on a paved road for 0.05 mile to the Bethel United Methodist Church on the left and the station.

Station marks are standard disks stamped BETHEL 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. The underground disk is set in an irregular mass of concrete that is 42 inches below the ground surface. It is 262 feet northwest of the center of the paved road, 71 feet north of the northwest corner of a frame house and near the west end of the church lawn.

Reference mark 1, a standard disk stamped BETHEL NO 1 1974, set in the top of a 12-inch cylindrical concrete monument that is 1 inch below the ground surface. It is 59.3 feet west-northwest of the southwest corner of the church, 2.5 feet east of the northeast corner of the frame house and 2 feet northeast of a powerline pole.

Reference mark 2, a standard disk stamped BETHEL NO 2 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 46 feet west of the northwest corner of the frame house, 44 feet northwest of a 16-inch pine tree.

Reference mark 3, a standard disk stamped BETHEL NO 3 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 43 feet northwest of the center of the crossroad, 31 feet west of the center of the paved road going north and 4.5 feet north of a stop sign. This mark serves as an azimuth mark.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION **BETHEL**

STATE **DELAWARE**

YEAR **1974**

SECOND ORDER

SOURCE **G-15790**

GEODETIC LATITUDE 75 21 23.31216	GEODETIC LONGITUDE 0 38 27 09.53263	ELEVATION	
		13.5 METERS 44 FEET	

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# OF ANGLES
DE	0700	517,238.07	164,844.40	+ 0 02 15
MD	1900	1,270,653.79	229,775.83	+ 1 01 54

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TOBATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
BETHEL RM 3	86 41 26.2	86 39 11	0700
BETHEL RM 3	86 41 26.2	85 39 33	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **BETHEL**

ESTABLISHED BY: **L.A.L.**

RECOVERED BY: **C.L. Novak**

YEAR: **1974** STATE: **Delaware**

YEAR: **1976** COUNTY: **Sussex**

LINE DISTANCE AND DIRECTION FROM NEAREST TOWN: **8 miles west of Selbyville**

HEIGHT OF TELESCOPE ABOVE STATION MARK **5** FEET.

HEIGHT OF LIGHT ABOVE STATION MARK **5** FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	W	(0.7 mile)	0 00' 00.00	
RM 1	SE	126.81	38.652	239 11 47
BOUNDARY MONUMENT 17	SE	(275.25)	83.866	239 42 23.8
RM 2	SW	91.31	27.831	314 29 44

The station and all marks were recovered and found in good condition as described in the 1974 description. The distances and directions to all marks were within close agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 17 was set at this date and it was intersected from this station, see description thereof.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

NOAA FORM 74-39  
11-770

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BISHOPVILLE  
NEAREST TOWN: Bishopville  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Del., Md. Line County: Sussex Del., Worcester Md.  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: H. S. Murphy

1b	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	OBJECT	BEARING		DISTANCE		DIRECTION
			FEET	METERS	FEET	METERS	
11b	DICK RM 3 (AZ. MK.)	(Elect. Dist.)	E	892.930	0	00	00.00
11b	RM 3 (AZ. MK.)	(Electronic Dist.)	W	750.334	181	56	19.84
11b	RM 2		WNW	22.106	213	37	47
11b	RM 1		NE	72.62	22.133	326	14 00

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.44 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 2.24 METERS.  
1b SURFACE-STATION MARK, UNDERGROUND-STATION MARK  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

No measurements between the RMs due to trees on line.  
The station is located about 2.5 miles east-southeast of Selbyville, 1 mile east-northeast of Bishopville, on road right-of-way and near the Maryland-Delaware State Line.

To reach the station from the Post Office in Bishopville, go north-east on blacktop road for 0.75 mile to State Line Road on the right and reference mark 3 on the left. Turn right and go east on State Line Road for 0.4 mile to the station on the right.

Station mark, a standard disk stamped BISHOPVILLE 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 24 feet northwest of a 16-inch oak tree, 18 feet south-southwest of the center of State Line Road and 3 feet northeast of a powerline pole. No underground disk was established.

Reference mark 1, a standard disk stamped BISHOPVILLE NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 4 feet southeast of a 10-inch oak tree and 21 feet north of the center of the road.

Reference mark 2, a standard disk stamped BISHOPVILLE NO 2 1974 is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 21 feet north of the center of the road, 12 feet west-northwest of a 12-inch oak tree and 4 feet east of a metal witness post.

Reference mark 3, a standard disk stamped BISHOPVILLE NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 49 feet northeast of sign MARYLAND-DELAWARE STATE LINE, 47 feet northwest of the center of intersection and 3 feet southwest of a powerline pole. The mark serves as an azimuth mark.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BISHOPVILLE

STATE MARYLAND

YEAR 1974

SECOND ORDER

SOURCE G-15790

OF ODOTIC LATITUDE	38 27 03.84782	ELEVATION	5.7 METERS
OF ODOTIC LONGITUDE	75 10 38.79216		19 FEET

## STATE COORDINATES (Feet)

STATE & ZONE	COORD	X	Y	PLANE AZIMUTH (from south)	CODE
MD	1900	1,321,928.32	230,174.18	+ 1 08 38	
DE	0700	568,512.83	164,352.63	+ 0 08 56	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  OR  $\Delta$   $\beta$  FORMULA SELECTING THE SECOND TERM.

TO STATION ON OBJECT	OF ODOTIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
BISHOPVILLE RM 3	91 21 04.6	90 12 27	1900
BISHOPVILLE RM 3	91 21 04.6	91 12 09	0700

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BISHOPVILLE

ESTABLISHED BY: L.A.L.

YEAR: 1974

STATE: Maryland

COUNTY: Worcester

RECOVERED BY: C.L. Novak

YEAR: 1976

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile east-southeast of Bishopville

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	E	(0.4 mile)		0 00 00.00
RM 2	WNW	72.52	22.103	31 40 45
BOUNDARY MONUMENT 7	N	(6.95)	2.118	88 43 03.1
RM 1	NE	72.61	22.131	144 17 54

Unable to measure between RM's

The station and all marks were recovered and found in good condition as described in the 1974 description. All distances and directions checked the 1974 observations.

The Maryland-Delaware Boundary Monument number 7 was set at this date, see description thereof.

SEPTEMBER 1981

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BLACKWATER  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1974  
STATE: Delaware  
COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5-1/2 miles west of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 8 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.  
BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
BLACKWATER RM 3 (AZ HK) 1974	NE	(0.55 mile)	418.737	0 00' 00.00"
E-W No. 34, 1976-1981	SE		70.48	47.1
BOUNDARY MONUMENT 34	SE		424.280	71 40 52.2
RM 2	W	83.42	25.426	205 58 50
RM 4	NE	69.51	21.187	328 46 54
RM 2 to RM 4		134.43	40.974	

In the 1981 survey, the station mark, reference mark 2, and azimuth mark were recovered as described and found in good condition. Reference mark 1 was found destroyed and RM 4 was set on this date.

A complete new description of the station follows.  
The station is located about 3 miles north of Hebron, 1/2 mile east of the Maryland-Delaware corner atone and on road right-of-way.  
To reach from the point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 5.4 miles to a fork. Keep left and continue west on State Highway 54 for 0.05 mile to the azimuth mark on the right, just east of a paved road leading north. Continue west on State Highway 54 for 0.55 mile to the station on the left at a farm lane leading south.  
The station mark is a standard disk stamped BLACKWATER 1974, set in the top of a 12-inch round concrete monument which is flush with the surface. It is 84.0 feet southeast of a witness post, 70.0 feet southwest of a witness post, 21.5 feet south of the center of State Highway 54, 8 feet east of the center of the private drive and 3.5 feet north of a powerline pole numbered 46507 96681 40 A 10. (NOTE 1b 7a)  
Reference mark 2 is a standard disk stamped BLACKWATER NO 2 1974, set in the top of a 12-inch round concrete post which is 1-inch below the surface. It is 91.5 feet west of the powerline pole, 83.0 feet northwest of another powerline pole, 14 feet north of the center of State Highway 54 and 1.0 feet south of a witness post. (NOTE 11b)  
Reference mark 4 is a standard disk stamped BLACKWATER 1974 NO 4 1981 set in the top of a 12-inch round concrete monument which projects 2-inches. It is 72 feet northeast of the powerline pole numbered 44507 96861 40 A 10, 43 feet east of the powerline pole numbered 44504 96689 2, 15 feet north of the center of State Highway 54 and 1.2 feet south of the witness post. (NOTE 11b)  
BLACKWATER RM 3 (AZ HK) 1974 is a standard reference mark disk stamped BLACKWATER NO 3 1974, set in the top of a 12-inch round concrete monument which is flush with the surface. It is 167 feet south of a sign "SHARPTOWN-LAUREL", 43 feet north of the center of State Highway 54, 27 feet east of the center of a paved road and in a small island between paved roads. (NOTE 11b)  
For additional information see description of Boundary Monument 34 which was set on this date.  
E-W No. 34 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 45 and 35 in 1976-1981.

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ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BLACKWATER  
STATE: DELAWARE  
YEAR: 1974  
SECOND ORDER

SOURCE G-15790

GEODETIC LATITUDE GEODETIC LONGITUDE	° ' "		ELEVATION	11.3 METERS 37 FEET
	38 27 43.50922 75 40 57.16844			
STATE COORDINATES (NAD83)				
STATE & ZONE	CODE	X	Y	
DE	0700	423,864.65	168,385.76	- 0 09 55
MD	1900	1,177,234.92	231,698.15	+ 0 49 37

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \tan^{-1} \frac{Y}{X}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From level)		PLANE AZIMUTH (From level)		CODE
	0	1	2	3	
BLACKWATER RM 3	242 22 39.2	242 32 35	242 32 35	0700	
BLACKWATER RM 3	242 22 39.2	241 33 02	241 33 02	1900	

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976



## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BRADLEY

STATE: MARYLAND

YEAR: 1974

SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 31.78570	ELEVATION	11.9 METERS
GEODETIC LONGITUDE	75 39 47.50728		39 FEET

STATE COORDINATES (FTH)			
STATE & ZONE	CODE	X	Y
MD	1900	1,182,792.60	230,592.89
DE	0700	429,402.49	167,184.38
			+ 0 50 21
			- 0 09 12

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \text{ION} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	COURSE
BRADLEY RM 3	13 14 33.8	12 24 13	1900
BRADLEY RM 3	13 14 33.8	13 23 46	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station mark and both reference marks were recovered as described and found in good condition. The 1974 azimuth mark (RM 3) was found destroyed and a new azimuth mark and Boundary Monument 33 were established on this date.

The azimuth mark is a standard National Geodetic Survey azimuth mark disk stamped BRADLEY NO. 2 1981, set in the top of a 10-inch round concrete monument which projects 9-inches. It is 43.5 feet east of the center of Spring Hill Lane, 15.3 feet south of the center of Waller Road, 12.8 feet east northeast of a telephone underground cable marker post numbered 1, 2.1 feet west of a powerline pole numbered 45022 96401 114 and 1.1 feet northeast of a witness post.

For additional information on Boundary Monument 33, see description thereof. E-W No. 33 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

Additional measured distances are as follows:

	feet	meters
RM 1 to RM 2	44.986	147.60
BDRY. MON. 33 to RM 1	7.206	23.65
BDRY. MON. 33 to RM 2	41.977	137.72
BDRY. MON. 33 to E-W No. 33	35.665	117.01
E-W No. 33 to RM 1	29.222	95.88

SEPTEMBER 1981

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BRADLEY STATE: Maryland COUNTY: Wicomico

NEAREST TOWN: Delmar, Delaware QUADRANGLE NO.: 380753

CHIEF OF PARTY: Lewis A. Lapine YEAR: 1974 DESCRIBED BY: R. K. Moore

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS; † HEIGHT OF LIGHT ABOVE STATION MARK 1.6 METERS.			
OBJECT	BEARING	DISTANCE	DIRECTION
1b SURFACE STATION MARK			
7a UNDERGROUND STATION MARK			
11b RM 3 (Az. Mk.)	S 0.3 ^	0 00	00.00q
11b RM 2	S 116.62 ^	(35.546)	05 04 19.3 ^
11b RM 1	NE 55.49 ^	16.915251	23 29.0 ^
RM 1 to RM 2		147.67	(45.010) ^

The station is located about 4.6 miles west of Delmar, Delaware, 3 miles north-northeast of Hebron, Maryland and on land owned by Mrs. Myra Bradley, Route 2, Delmar, Delaware, Telephone number 896-9456.

To reach the station from the railroad crossing and State Road 54 in Delmar, Delaware, go west on State Road 54 for 4.0 miles to a paved cross-road. Turn left and go southwest on a paved road for 0.55 mile to a Y-fork. Take the left fork and go south on a paved road for 0.3 mile to Mrs. Myra Bradley house and the station on the right. Continue south on the paved road for 0.3 mile to RM 3 (Az. Mk.) in the northeast angle of a paved T-road.

Station marks are standard disks stamped BRADLEY 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 61 feet east of the northeast corner of Mrs. Bradley house, 29 feet northwest of the center of the paved road, 8 feet west of a sign, SPRING HILL LANE, and 6 feet northeast of powerline pole number 122. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped BRADLEY NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 35 feet north of a 24-inch maple tree and 14 feet southeast of the center of the paved road.

Reference mark 2, a standard disk stamped BRADLEY NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 55 feet south of a 14-inch cottonwood tree and 13 feet west-northwest of the center of the paved road.

Reference mark 3, a standard disk stamped BRADLEY NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 40 feet east of the center of the paved road, 19 feet north of the center of a paved road and 3 feet east of a stop sign. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BRADLEY  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. NOVAK  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4-1/2 miles west of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
YEAR: 1974 STATE: Maryland  
COUNTY: Wicomico  
BENCH MARK ALSO ☐  
NEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE	DIRECTION
BRADLEY AZ 1 MK 2 (EDM)	S	492.958	0 00' 00.00"
RM 2	S	116.50	35.508 5 27 37
E-W No. 33, 1976-1981	NNW	81.45	24.826 135 19 15.8
BOUNDARY MONUMENT 33	NE	32.91	10.032 241 15 50.2
RM 1	NE	55.21	16.831 251 46 58
BRADLEY TO BRADLEY AZ MK 2 (Polaris azimuth) = 12° 51' 59.4"			



HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NAME OF STATION: BRIAR  
NEAREST TOWN: Selbyville  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Delaware  
QUADRANGLE NO.: 380752  
YEAR: 1974  
COUNTY: Sussex  
DESCRIBED BY: A. G. Thacker

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BRIAR  
STATE: DELAWARE  
YEAR: 1974  
SOURCE: G-15790  
SECOND - ORDER

OBJECT	BEARING		DISTANCE		DIRECTION	
	FEET	METERS	FEET	METERS		
DAVIS (Electronic Distance)			1221.574	0	00' 00.00"	
DAVIS RM 3 (AZ. MK.)			0.4	0	05 36.2	
DAVIS RM 2			24.15	7.360	77 58 08	
BRIAR RM 1 (Traverse Distance)			23.295	259	01 50.60	

The station is located about 4.5 miles northeast of Whalesville, Maryland and 2.0 miles west of Selbyville, Delaware, on property owned by Mr. John R. Davis of Selbyville, Delaware.

To reach the station from the Post Office in Selbyville, Delaware, go southwest on Church Street for 0.6 mile to the junction with U. S. Highway 113. Turn right and go north on U. S. Highway 113 for 0.2 mile to the junction with State Road 54. Turn left and go northwest on State Road 54 for 0.25 mile to a Y-intersection, bear left and go south on the paved road for 0.1 mile to a crossroad, continue south on the paved road for 0.1 mile to a crossroad and wooden bridge, continue southerly crossing bridge for 0.85 mile to the state line and a field road on the right and station DAVIS on the right. Turn right and go west on the field road for 0.2 mile to an old abandoned house, bear left and go west crossing a field for 0.2 mile to the west end of the field and the station. The station mark is a standard disk stamped BRIAR 1974. The disk is brazed to the top of a 4-inch galvanized pipe that projects 9 inches above the ground surface. It is 18 feet north-northeast of a 10-inch oak tree, 11 feet west of the west edge of the field, 7 feet east of a ditch and 4 feet north of a metal witness post.

Reference mark 1, a standard disk stamped BRIAR NO 1 1974. The disk is brazed to the top of a 4-inch galvanized pipe that projects 9 inches above the ground surface. It is 11 feet east of a triple trunk oak tree 20 inches in diameter, 11 feet east of the ditch and 8 feet west of the west edge of the field.

Reference mark 2, a standard disk stamped BRIAR NO 2 1974. The disk is brazed to the top of a 4-inch galvanized pipe that projects 7 inches above the ground surface. It is 11 feet west of the west edge of the field, 7 feet east of the ditch and 7 feet north of a 10-inch white oak tree.

DAVIS RM 3 serves as an azimuth mark, it is a standard disk stamped DAVIS NO 3 1974, set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 11 feet southwest of the center of the field road, 9 feet northwest of a 14-inch pine tree and 3 feet northeast of a metal witness post.

Detailed description:

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	# COR. & ANGLE
DE	0700	542,765.56	164,654.56	+ 0 05 34
MD	1900	1,296,180.24	230,029.01	+ 1 05 15

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # COR. & FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	DEODETIC AZIMUTH (From mark)		PLANE AZIMUTH (From mark)		CODE
	°	'	°	'	
DAVIS RM 3	274	31	274	26	04
DAVIS RM 3	274	31	273	26	23

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BRIAR  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. NOVAK  
YEAR: 1974  
STATE: Delaware  
COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/2 miles west of Selbyville  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE	
		FEET	DIRECTION
DAVIS RM 3 (AZ. MK.) (VC)	E	(0.4 mile)	0 00 00.00
BOUNDARY MONUMENT 12	SSE	(252.14)	76.851 71 10 44.2
RM 2	S	24.14	7.358 77 52 45
RM 1	N	76.13	23.205 258 44 21

Unable to measure between RM's

The station and all marks were recovered and found in good condition as described in the 1974 description. A shorter distance of 0.30 feet or 0.090 meters was noted to reference mark one. A difference of 12 minutes and 7 seconds in direction was also noted to it. It is believed that the reference mark may have been disturbed by farm operations sometime in the past. It is now solid and in good condition. The distances and directions to reference mark two were within close agreement with the 1974 observations. The 1974 description is adequate. The Maryland-Delaware E-W Line Boundary Monument number 12 was set at this date, see description thereof.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
11-70

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CABE  
NEAREST TOWN: Selbyville, Delaware  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Del., Md. Line, COUNTY: Sussex Del., Worcester Md.  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: R.K. Moore

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION CABE

STATE MARYLAND

YEAR 1974

SECOND ORDER

SOURCE G-15790

OBJECT	BEARING		DISTANCE		DIRECTION
	FEET	METERS	FEET	METERS	
11b RM 3 (Az. Mk.) Electronic Dist.	SW	259.022	0	00	00.00
11b RM 2	NW	34.09	10.390	89	37 46
11b RM 1	NE	81.10	24.719	185	19 02
RM 1 to RM 2		91.02	27.745		

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS; HEIGHT OF LIGHT ABOVE STATION MARK METERS.  
1b SURFACE STATION MARK. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

The station is located about 1.4 miles west-northwest of Selbyville, Maryland, 0.6 mile south-southeast of Selbyville, Delaware, on road right-of-way and near the Maryland-Delaware State Line.

To reach the station from the Post Office in Selbyville, go north-east on Church Street for 0.2 mile to the junction with Main Street and State Road 54. Turn right and go south-southeast on State Road 54 for 0.4 mile to where State Road 54 turns left, continue straight ahead on a paved road, south, for 0.35 mile to the station on the left. Continue south on the paved road for 0.2 mile to reference mark 3 (Az. Mk.) on the left.

Station marks are standard disks stamped CABE 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 85 feet south-southeast of a powerline pole, 30 feet northeast of a guy pole and 22 feet southeast of the center of the paved road. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped CABE NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 12 feet southeast of the center of the paved road and 3 feet southwest of the powerline pole.

Reference mark 2, a standard disk stamped CABE NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 69 feet northeast of a 16-inch pine tree, 34 feet north-northwest of the guy pole and 12 feet northwest of the center of the paved road.

Reference mark 3, a standard disk stamped CABE NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 81 feet southwest of a powerline pole, 25 feet northeast of a powerline pole and 18 feet southeast of the center of the paved road. The mark serves as an azimuth mark.

GEODETIC LATITUDE	38 27 03.76690	ELEVATION	10.8 METERS
GEODETIC LONGITUDE	75 13 07.92908		35 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,310,066.52	229,931.84
DE	0700	556,648.35	164,316.31
			+ 1 07 04
			+ 0 07 23

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  FOR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from true)		PLANE AZIMUTH (from true)		CODE
	0	1	0	1	
CABE RM 3	10 20 14.2		9 13 10		1900
CABE RM 3	10 20 14.2		10 12 51		0700

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CABE

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1974 STATE: Maryland

YEAR: 1976 COUNTY: Worcester

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile east of Selbyville

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	SW	(0.2 mile)	0	00 00.00
RM 2	NW	34.10	10.392	89 38 04
BOUNDARY MONUMENT 9	N	(21.32)	6.198	169 40 59.9
RM 1 to RM 2	NE	81.10	24.719	185 19 23
		91.02	27.745	

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

The station and all marks were recovered in good condition as described in 1974 description. The distance and direction to RM's checked the 1974 observations.  
The Maryland-Delaware Boundary Monument number 9 was established at this date, see description thereof.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
(11-70)

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CEDAR  
STATE: Del., Md. Line COUNTY: Worcester Md.  
CHIEF OF PARTY: Lt. Lewis A. Lapine YEAR: 1974 DESCRIBED BY: R.K. Moore

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CEDAR

STATE: DELAWARE YEAR: 1974 SECOND ORDER

SOURCE G-15790

NOTE	SURFACE STATION MARK	DISTANCE TO AZIMUTH MARK	BEARING	DISTANCE	METERS	DIRECTION	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
1b	DIVISION 1 (Electronic Distance)	E (4615.36)	0 00	00.00					
11b	Ocean City WI	0.3 x	21	00	59.4				
11b	RM 1	16.891	94	56	19				
11b	RM 2	55.41	94	56	19				
11b	RM 3	19.975	161	54	29				
11b	Fenwick Island Lighthouse	65.54	19	34	04				
11b	Fenwick Island Lighthouse	254.655	188	19	34.04				
11b	Fenwick Island Lighthouse	1.5	359	35	21.7				

No measurement was made from RM 1 to RM 2 due to brush on line.  
The station is located about 3.5 miles northeast of Ocean City, 1.6 miles west of Fenwick Island, on road right-of-way and near the Maryland-Delaware State Line.

To reach the station from the junction of State Roads 14 and 54 in Fenwick Island, go west-northwest and southeast on State Road 54 for 4.15 miles to a side road left and the Sound Methodist Church on the left. Turn left and go southeast on a paved road for 0.7 mile to a 1-road and a stop sign. Turn left and go southeasterly on a paved road for 0.45 mile to a side road right, continue easterly on the paved road for 0.8 mile to RM 3 (AZL, Mk.) on the left, continue easterly on the paved road for 0.2 mile to the end of the road and the station on the left.

Station marks are standard disks stamped CEDAR 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that projects 4 inches above the ground surface. It is 35 feet northeast of the center of the paved road, 18 feet west of the waters edge and 5 feet east-southeast of a metal witness post. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped CEDAR NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 26 feet west of the waters edge and 24 feet south of the center of the paved road.

Reference mark 2, a standard disk stamped CEDAR NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 5 inches above the ground surface. It is 13 feet south-southwest of the center of the paved road.

Reference mark 3, a standard disk stamped CEDAR NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 53 feet west of an 8-inch cedar tree and 18 feet north of the center of the paved road. The mark serves as an azimuth mark.

## Part One: East-West Boundary

GEODETIC LATITUDE	38 27 04.66182	ELEVATION	9 METERS
GEODETIC LONGITUDE	75 05 10.61821		3 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	594,620.26	164,515.68
MD	1900	1,348,028.31	230,790.73

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM.

TOSTATIONOR OBJECT	GEODETIC AZIMUTH (Feet)	PLANE AZIMUTH (Feet)	CODE
CEDAR RM 3	98 50 58.9	98 38 39	0700
CEDAR RM 3	98 50 58.9	97 38 55	1900

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: CEDAR

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1974 STATE: Delaware

YEAR: 1976 COUNTY: Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 1/2 miles northwest of Ocean City

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	W	(1/4 mile)	0 00	00:00
FENWICK ISLAND L H 1909 (VG)	E	(1 1/2 miles)	171 15	44.7
BOUNDARY MONUMENT 2	S	65.93	20.094	15 42.5
RM 1	WSW	55.41	16.889	266 36
RM 2		65.55	19.972	333 34
RM 1 to RM 2		67.24	20.496	07

The station and all marks were recovered and found in good condition. The distances and directions were within close agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 2 was established at this date, see description thereof.



## HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NAME OF STATION: CONNELLY  
STATE: Maryland  
COUNTY: Wicomico  
NEAREST TOWN: Delmar, Delaware  
QUADRANGLE NO.: 380753  
CHIEF OF PARTY: Lewis A. Lapine  
YEAR: 1974  
DESCRIBED BY: R. K. Moore

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CONNELLY  
STATE: MARYLAND  
YEAR: 1974  
SOURCE: G-15790

SECOND ORDER

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	BEARING	DISTANCE	FEET	DIRECTION	METERS
1b	SURFACE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
7a	UNDERGROUND STATION MARK						
11b	RM 3 (AZ. Mk. X Electronic Dist.)	W	49.63	670.528	0	00	00.00
11b	RM 2	NW	15.095	54	12	15.2	
11b	RM 1	E	54.34	16.562	179	51	26.0
	RM 1 to RM 2		92.41	28.170			

The station is located about 1.3 miles west of Delmar, Delaware, 0.6 mile south of State Road 54 and on road right-of-way. To reach the station from the railroad crossing and State Road 54 in Delmar, go west on State Road 54 for 0.2 mile to a Y-fork, bear left and continue west on a paved road for 0.35 mile to a Y-fork, bear right and continue west on a paved road for 0.65 mile to powerline pole number 40 F-20 and the station on the left.

Station marks are standard disks stamped CONNELLY 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 76 feet west of a driveway, 21 feet south of the center of the paved road, 4 feet south of powerline pole number 40 F-20 and 4 feet west-southwest of a metal witness post. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped CONNELLY NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 22 feet west-southwest of the driveway and 21 feet south of the center of the paved road.

Reference mark 2, a standard disk stamped CONNELLY NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 5 inches above the ground surface. It is 18 feet north of the center of the paved road and 18 feet east-southeast of a 14-inch oak tree.

Reference mark 3, a standard disk stamped CONNELLY NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 6 inches above the ground surface. It is 16 feet south of the center of the paved road, 4 feet south-southwest of powerline pole number 28 and 4 feet south-southwest of a metal witness post. The mark serves as an azimuth mark.

To reach reference mark 3 from the station, go west on the paved road for 0.4 mile to the mark on the left.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CONNELLY  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. NOVAK  
YEAR: 1974  
STATE: Maryland  
COUNTY: Wicomico  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1-1/4 miles west of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE	FEET	DIRECTION
CONNELLY RM 3 (AZ MK) 1974	W	670.503	0	00' 00.00
RM 2	NW	49.51	15.091	54 12 08
E-W No. 30, 1976-1981	NNW	59.219	69 13 15.1	
CONNELLY 2	NNE	32.67	9.958	102 46 41.3
RM 1 (destroyed)	E	54.34	16.562	179 51 16

GEODETIC LATITUDE	38 27 23.80762	ELEVATION	14.2 METERS
GEODETIC LONGITUDE	75 36 08.00305		47

STATE & ZONE	COLOR	X	Y	ANGLE
MD	1900	1,200,263.30	230,047.43	+ 0 52 38
DE	0700	446,861.53	166,336.36	- 0 06 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION ON OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COLOR
CONNELLY RM 3	92 32 53.0	91 40 15	1900
CONNELLY RM 3	92 32 53.0	92 39 48	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station mark was found disturbed and out of position. The subsurface disk was found in good condition after the surface mark was removed. RM 1 was found in fair condition but it is possible that it had been disturbed. Both the station mark and RM 1 are in immediate danger of being destroyed. All other marks at the station were recovered as described previously.

A new station CONNELLY 2 and BOUNDARY MONUMENT 30 were established on this date. For additional information see descriptions of CONNELLY 2 and BOUNDARY MONUMENT 30.

E-W No. 30 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.



# HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CONNELLY 2  
NEAREST TOWN: Delmar  
CHIEF OF PARTY: C.L. Novak  
STATE: Delaware  
COUNTY: SUBSEX  
QUADRANGLE NO.: 380753  
YEAR: 1981  
DESCRIBED BY: R.G. POUSE

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK		DISTANCES TO ADJUTIN MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION		BEARING		FEET		METERS		DIRECTION	
	SURFACE-STATION MARK	UNDERGROUND-STATION MARK	OBJECT	BEARING	DISTANCE	BEARING	DISTANCE	BEARING	DISTANCE	BEARING	DISTANCE	DIRECTION
11b	CONNELLY RM 3 (AZ MK) 1974			W	672.783	0	00	00.00				
	RM 2			W	11.314	13	43	59				
	E-W No. 30 1976-1981			NNW	168.03	51.215	63	52	30.4			
	CONNELLY 1974			SSW	32.67	9.958	283	36	21.9			
	BOUNDARY MONUMENT 30			SW	21.25	6.476	291	10	22.9			
	RM 2 to CONNELLY 1974				49.31	15.091						
	RM 2 to BOUNDARY MONUMENT 30				40.32	12.287						

The station is located about 7-1/2 miles north-northwest of Salisbury, 1-1/4 miles west of Delmar and 1/2 mile south of State Highway 54. It is on road right-of-way. To reach from a point where State Highway 54 crosses a railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and go west on Waller Road for 0.35 mile to a fork. Keep right and go west on a paved road for 0.75 mile to the station on the right.

The station surface mark is a standard disk stamped CONNELLY 2 1981, set in the top of a 10-inch round concrete monument which is 1-inch below the surface. The sub-surface mark is a standard disk stamped CONNELLY 2 1981, set in a 6-inch mass of concrete, 36 inches below the surface. They are 65.5 feet northwest of the west edge of a 48-inch culvert, 30.5 feet north-northeast of a witness post, 28.9 feet north-northeast of a powerline pole numbered 46796 96468, 13.5 feet southwest of a 16-inch oak tree with a triangular blaze, 10 feet north of the center of the road and 4.6 feet south of a witness post.

Reference mark 2 is a standard disk stamped CONNELLY NO 2 1974, set in the top of a 12-inch round concrete post which projects 2-inches. It is 50.1 feet northwest of the witness post which is near old station CONNELLY, 46.4 feet northwest of the powerline pole, 35.7 feet west of the witness post which is near this station and 18.7 feet north of the center of the road.

Boundary Monument 30 and E-W No. 30 will serve as reference marks for this station. E-W No. 30 is a standard National Geodetic Survey disk set on line between Boundary Monuments 25 and 35 in 1976-1981.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CONNELLY 2

STATE: DELAWARE

YEAR: 1981

SECOND ORDER

SOURCE: G-16489

GEODETIC LATITUDE	38° 27' 24.11911	ELEVATION	14.0 METERS
GEODETIC LONGITUDE	75° 36' 07.89453		46 FEET

STATE COORDINATES (FEET)			
STATE & ZONE	COORD	X	Y
OE	0700	446,870.22	166,367.85
MD	1900	1,200,271.45	230,079.07

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $P = 100 \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
CONNELLY RM 3		91 43 15.4	91 50 11	0700
CONNELLY RM 3		91 43 15.4	90 50 37	1900

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

IOAA FORM 76-39  
12-701

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEOLOGIC SURVEY

### DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CYPRESS / STATE: Maryland, COUNTY: Worcester  
NEAREST TOWN: Whaleyville, Maryland, PARADISE NO.: 380752  
CHIEF OF PARTY: Lewis A. Lapine YEAR: 1974 DESCRIBED BY: A. G. Thacker

DESCRIBED BY: A. G. Thacker

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK		REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		METERS.	
	1	2	3	4	5	6	7	8
	SURFACE-STATION MARK.		UNDERGROUND-STATION MARK.		BEARING	DISTANCE	DIRECTIONS	
					DEGREE	FEET	METERS	
11b			RM 3 (Az. Mk.)	*	E	0.3 mile	0	00 00.00
11b			RM 1		SE	3.92	10.340	52 22 44
11b			RM 2		SW	41.48	12.644	149 09 46
			RM 1 to RM 2	*		56.63	17.260	

The station is located about 4.7 miles west of Seelyville, Delaware and 3.5 miles north of Whaleyville, Maryland and on property owned by Delaware Wildlands Inc., Mr. Edmond Harvey, President, 1011 Washington Street, Wilmington, Delaware 19801, Phone 658-0204.

To reach the station from the Post Office in Selbyville, Delaware, go southwest on Church Street for 0.6 mile to the junction with U. S. Highway 113. Turn left and go south on U. S. Highway 113 for 0.3 mile to a paved crossroad, just after crossing the State Line. Turn right and go westerly on the paved road for 1.05 mile to a crossroad. Continue westerly on the paved road for 0.6 mile to a T-road. Turn right and go northwest on a paved road for 1.25 miles to where the road makes a sharp curve to the left. Here bear left and go south following the paved road for 0.5 mile to a side road on the right, turn right and go west on a sand road for 0.75 mile to sand side road on the left, continue westerly on the sand road for 0.15 mile to Reference Mark 3 on the right, continue westerly on the sand road for 0.25 mile to a wooden bridge, cross bridge continue westerly on the sand road for 0.05 mile to the station on the right.

The station marks are standard disks stamped CYPRESS 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 35 feet north of a sign reading "CYPRESS SWAMP 1200 ACRES CONSERVATION AREA DELAWARE WILDLANDS INC. NON PROFIT," 21 feet northwest of the sand road and 4.5 feet south-south-east of a metal witness post.

Reference mark 1, a standard disk stamped CYPRESS NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 12 feet southeast of the sand road, 7 feet northwest of a canal ditch.

Reference mark 2, a standard disk stamped CYPRESS NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 20 feet north-northwest of the sand road, 14 feet southwest of the sign and 2.7 feet southeast of a 4-inch pine tree. Reference mark 3, a standard disk stamped CYPRESS NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 29 feet north-northwest of the sand road and 8 feet north-northwest of a metal witness post.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION CYPRESS

STATE MARYLAND

YEAR 1974

SECOND PAGE

**SOURCE G-15790**

	0°						ELEVATION.	11.2 METERS 37 FEET
GEODETIC LATITUDE:	38	26	43.46008					
GEODETIC LONGITUDE	75	18	48.38594					

## STATE COORDINATES (Feet)

STATE & ZONE	CODF	X	V	$\theta = \text{DIR } \Delta \text{ B. ANG/CAT}^{\circ}$
MD	1900	1,283,025.02	227,363.58	+ 1 03 31
DE	0700	529,565.81	162,217.81	+ 0 03 51

2. THE FOLLOWING ARE THE NAMES OF THE AGENCIES AND INDIVIDUALS WHOSE NAMES ARE BEING SUBMITTED FOR THE 1980 CONVENTION:

PLANE ANGLE HAS BEEN COMPUTED BY THE 9-10-12-57 FORMULA NEGLECTING THE SECOND TERM			
TOSTATION OR OBJECT	GEODESIC AZIMUTH (from north)	PLANE AZIMUTH (from rough)	CODE
CYPRESS RM 3	268 46 08.2	267 42 37	1900
CYPRESS RM 3	268 46 08.2	268 42 17	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE: TRIANGULATION STATION

NAME OF STATION: CYPRESS

ESTABLISHED BY: L. A. L.

YEAR: 1974 STATE: Maryland

RESTAURANT L.A. L. NOVAK  
RECOVERED BY: C. L. NOVAK

YEAR:	1977
COUNTY:	ALABAMA
PURCHASER'S NAME:	JAMES W. JONES

RECOVERED BY: C.L. NOVAK YEAR: 1977 COUNTY: NOT CREDITED  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles southeast of Gumboro

[illegible]

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE ORDNANCE AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ1 MK)	SE	(0.3 mile)	0	00° 00' 00"
RM 1	S	33.92	10.339	52 19 24
RM 2	W	41.46	12.639	49 10 18
BOUNDARY MONUMENT 14	N	(2299.37)	700.850	271 59 43.9
DM 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100		56.22	17.252	

The station and all marks were recovered and found in good condition as previously described.

The Maryland-Delaware Boundary Monument number 14 was established 700.85 meters north of this station at this date. See description thereof.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DAVIS  
NEAREST TOWN: Selbyville, Delaware  
CHIEF OF PARTY: L.A. Lapine  
STATE: Maryland  
COUNTY: Worcester-Sussex  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: H.S. Murphy

ID	SURFACE-STATION MARK	OBJECT	BEARING	DISTANCE		DIRECTION	METERS
				FEET	METERS		
11b	BRIAR (Electronic Distance)		N	1221.578	00 00	00 00	00.0
RM 1	(Tension 5 kgs.)		N	26.42	8.053	81 13	39.7
11b	RM 2		WSW	32.24	9.826	349 13	56.1
11b	RM 3		W	0.5	1.5	359 57	43.1
RM 1 to RM 2				42.36	12.913		

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.56 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1.56 METERS.  
DISTANCES AND DIRECTIONS TO SURROUNDING OBJECTS WHICH CAN BE SEEN FROM THE STATION

The station is located about 4 3/4 miles northeast of Whalesville, Maryland, 1 mile west of Selbyville, Delaware and on the property of Mr. Donald Hudson, Route 2, Box 12 A, Selbyville, Delaware.

To reach the station from the post office in Selbyville, Delaware, go southwest on Church Street for 0.25 mile to a railroad crossing. Continue southwest on Highway 113, turn right and go north on US Highway 113 for 0.2 mile to the junction of State Highway 54. Turn left and go northwest on State Highway 54 for 0.25 mile to a Y in road. Turn left and go south on paved road for 0.2 mile to a T-road junction. Turn left and go southwest on paved road for 0.85 mile to the station on the right.

To reach the reference mark 3 (Az. Mk.) from the station, go west on sand road for 0.5 mile to the mark on the left.

The station mark, a standard disk stamped DAVIS 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 36 feet west of the junction of sand roads, 34 feet southeast of a 30-inch gum tree with triangle blaze, 26 feet northeast of a 20-inch gum tree, 12 feet south of the center of a sand road and 9 feet northeast of a metal witness post with sign.

Reference mark 1, a standard disk stamped DAVIS NO 1 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 18 feet west of a 30-inch gum tree with triangle blaze, and 14 feet west of a sand road.

Reference mark 2, a standard disk stamped DAVIS NO 2 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 26 feet west of a metal witness post and 17 feet south of the center of a sand road.

Reference mark 3 (Az. Mk.), a standard disk stamped DAVIS NO 3 1974, set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 11 feet southwest of the center of a field road, 9 feet northwest of a 14-inch pine tree and 3 feet northeast of a metal witness post with sign.

The underground disk for the station mark is set in the top of an irregular mass of concrete 42 inches below the surface of the ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DAVIS

STATE: MARYLAND

YEAR: 1974

SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 04.30333	ELEVATION	12.0 METERS
GEODETIC LONGITUDE	75 15 12.20147		39 FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	N	E	PLANE AZIMUTH (From north)	CODE
MD	1900	1,300,181.10	229,795.08	+ 1 05 46	
DE	0700	546,761.83	164,351.20	+ 0 06 06	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
DAVIS RM 3	94 24 16.0	93 18 30	1900
DAVIS RM 3	94 24 16.0	94 18 11	0700

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DAVIS

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile west of Selbyville

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

YEAR: 1974

STATE: Maryland

COUNTY: Worcester

NEAREST TOWN: 1 mile west of Selbyville

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	W	(0.5 mile)	0 00	00:00
RM 1	N	26.42	8.050	81 16 17
BOUNDARY MONUMENT 11	N	(27.42)	8.359	86 09 46.4
RM 2	WSW	32.21	9.819	349 15 43
RM 1 to RM 2		42.37	12.914	
RM 1 to MONUMENT 11		2.52	0.769	

The station and all marks were recovered and found in good condition as described in the 1974 description. A difference of 2 minutes and 35 seconds in direction was noted to reference mark 1. A difference of 1 minute and 47 seconds in direction was noted to reference mark 2. A difference of 0.03 foot or 0.007 meter was noted to reference mark 2. All other distances and directions agreed with the previous observations. The Maryland-Delaware Boundary Monument number 11 was established at this date, see description thereof.



## HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: DELMAR RM 4  
NEAREST TOWN: Delmar  
CHIEF OF PARTY: L.A. Lapine  
STATE: Delaware  
COUNTY: Sussex  
YEAR: 1974  
OBSERVED BY: H. S. Murphy

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
LINE 1932				
DELMAR 1934 RM 5 (Tension 5 kgs.)	NE 86.43	26.345	312	00 00.0
DELMAR 1934 (Electronic Dist.)	NE 88.846	337	52	57.74

The station is located in the west edge of Delmar, Delaware and on the property of Mrs. Lucy Sparrow, Box 192, Delmar, Delaware. To reach the station from the railroad crossing and State Highway 54 in Delmar, Delaware, go west on State Highway 54 for 0.3 mile to a reverse Y and the station on the right as described.

The station is a standard reference mark disk stamped DELMAR NO 4 1934 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 107 feet southeast of the intersection of State Highway 54 and a paved road, 43 feet northeast of the center of State Highway 54 and 39 feet south of the center of the paved road. The underground disk is a standard disk stamped DELMAR NO 4 1934 1974, set in the top of an irregular mass of concrete 42 inches below the ground surface.

DELMAR 1934 RM 5, a standard reference mark disk stamped DELMAR NO 5 1934 1974, set in the top of a cylindrical concrete monument that is flush with the ground surface. It is 17 feet north of the center of the paved road, 13 feet east of a sign post with sign "SHARPTOWN" attached and 1.8 feet south-southwest of a powerline pole number 3 R.

DELMAR 1934, a standard disk stamped DELMAR 1934, set in the top of a 12-inch square concrete monument that is flush with the ground surface. It is 34 feet north of the center of the paved road, 21 feet northwest of a powerline pole number 3 Q, 8.6 feet south of a 12-inch maple tree and 3.5 feet south-southwest of a metal witness post with sign. The underground disk is assumed to be as described previously. (Note 1a 7a)

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DELMAR RM 4  
ESTABLISHED BY: L.A. Lapine  
RECOVERED BY: C.L. Novak  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: In west part of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 5	NE 86.43	26.344	312	00 00.00
RM 6	ENE 103.7	92.57	18	34 09
DELMAR 1934	ENE 291.47	88.840	25	45 37
RM 5 to DELMAR 1934	216.97	66.132		
RM 6 to DELMAR 1934	139.28	11.975		

The station was recovered and found in good condition as described in the previous 1974 description. The reference mark 5, for triangulation station DELMAR 1934, will be destroyed by construction in the near future. A new reference mark 6 was established at this date to replace the subject marker. The new reference mark 6 was intersected from this station. The new reference mark is described in the description for triangulation station DELMAR 1934. The distances and directions to all reference marks were within close agreement with the previous description.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DELMAR RM 4  
STATE: DELAWARE  
YEAR: 1974  
SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 24.81947	ELEVATION	15.27 METERS
GEODETIC LONGITUDE	75 35 04.28498		50.1 FEET

STATE & ZONE	CODE	K	Y	P. U.S. Δ. & ANGLE
DE	0700	431,930.38	166,429.00	- 0 06 16
MD	1900	1,205,329.68	230,227.87	+ 0 53 18

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE P. U.S. Δ. & FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From meridian)	PLANE AZIMUTH (From meridian)	CODE
LINE	271 54 09.6	272 00 25	0700
LINE	271 54 09.6	271 00 51	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

LEVELING BY NGS

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: E-W No. 29  
ESTABLISHED BY: C.L.N.  
RECOVERED BY: C.L. Novak  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1/4 mile west of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
DELMAR RM 4 1976	NNW	227.50	69.342	*0 00' 007.00
BOUNDARY MONUMENT 29	S	136.46	41.593	240 07 56.9

In the 1981 survey, the old Maryland-Delaware disk was recovered as described and found in good condition. The old disk was replaced with a standard National Geodetic Survey station disk stamped E-W No. 29 1976-1981. This station was established on line between Boundary Monuments 25 and 35 in 1976.

Maryland-Delaware Boundary Monument 29 was established on this date, see description thereof.



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
(12-70)  
(FORMERLY CGS FORM 521)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DICK  
NEAREST TOWN: Bishopville  
CHIEF OF PARTY: Lewis A Lapine  
STATE: Md-Del Line  
COUNTY: Worcester-Sussex  
QUADRANGLE NO.: 380752  
YEAR: 1974  
OBSERVED BY: H. S. Murphy

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DICK

STATE: MARYLAND

YEAR: 1974

SECOND ORDER

SOURCE: C-15790

NOTE: 1. HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS; 2. HEIGHT OF LIGHT ABOVE STATION MARK 1.6 METERS; 3. SURFACE STATION MARK, 4. DISTANCE FROM STATION MARK TO AZIMUTH MARK, 5. REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	OBJECT	BEARING		DISTANCE		DIRECTION
		FEET	METERS	FEET	METERS	
11b RM 3 (Electronic Distance)	W	788.406	0	00	00.00	
11b RM 2	NW	72.19	22.003	39	40	50.8
11b RM 1	NE	77.46	22.608	42	11	37.8

No measurement between the RMs due to heavy brush on line. X  
The station is located about 1.4 miles northeast of Bishopville and 2.4 miles southeast of Selbyville. X

To reach the station from the post office in Bishopville, go north-east on a paved road for 0.75 mile to a side road right. Turn right and go east on the paved road for 0.9 mile to reference mark 3 on the left, continue east on the paved road for 0.5 mile to the station on the right. X  
Station marks are standard disk stamped DICK 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 29 feet east-northeast of a 10-inch oak tree with a triangle blaze, 23 feet south of the center of the paved road and 3 feet south-southwest of a powerline pole number 12. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface. X

Reference mark 1, a standard disk stamped DICK NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 24 feet north of the center of the paved road, 16 feet west of a 28-inch pine tree and 10 feet east of a 10-inch oak tree X

Reference mark 2, a standard disk stamped DICK NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 23 feet north of the center of the paved road, 8 feet west of a twin trunk oak tree and 7 feet east of a 30-inch pine tree. X  
Reference mark 3, a standard disk stamped DICK NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 60 feet northeast of a powerline pole number 19 and 17 feet north of the center of the paved road. The mark serves as an azimuth mark. X

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DICK

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1974

STATE: Maryland

COUNTY: Worcester

QUADRANGLE NO.: 380752

YEAR: 1974

OBSERVED BY: H. S. Murphy

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK 1.6 FEET.

REMARKS: BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE		DIRECTION		
		FEET	METERS			
RM 3 (AZ MK) (VG)	W	(0.5 mile)	0	00	00:00	
RM 2	NW	72.19	22.003	39	39	47
BOUNDARY MONUMENT 6	N	18.58	5.663	89	02	04.0
RM 1	NE	77.46	23.607	42	10	34

The station sub-surface disk was recovered and found in good condition. The surface disk had been destroyed. A new surface disk set at this date. All other marks were found in good condition. The distance and direction to all objects were within close agreement with the 1974 observations.

## Part One: East-West Boundary

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	5.8 METERS 19 FEET
38 27 03.68652	75 09 29.46164		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,327,442.98	230,268.56
DE	0700	574,028.43	164,351.21

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)		PLANE AZIMUTH (From south)		CODE
	$\theta$	$\Delta$	$\theta$	$\Delta$	
DICK RM 3	91 01	35.1	89 52	13	1900
DICK RM 3	91 01	35.1	90 51	56	0700

A complete new description follows.

The station is located about 2 1/2 miles southeast of Selbyville, 1 1/2 miles northeast of Bishopville, and on road right-of-way. To reach from the post office in Bishopville, go northeast on a paved road for 0.75 mile to a side road right. Turn right and go east on State Line Road for 0.9 mile to the azimuth mark on the left. Continue east on State Line Road for 0.5 mile to the station on the right.

The surface mark is a standard disk stamped DICK 1974, set in the top of a 10-inch mass of concrete which is 2-inches below the surface. The sub-surface mark is stamped DICK 1974, set in an 8-inch mass of concrete which is 42-inches below the surface. It is 29 feet east-northeast of a 10-inch oak tree with a triangular blaze, 23 feet south of the center of State Line Road, 3 feet south-southwest of a powerline pole numbered 12, and 1 foot south of a witness post.

Reference mark 1 is a standard disk stamped DICK NO. 1 1974 set in the top of a 10-inch round concrete monument which is flush with the surface. It is 77.5 feet northeast of the witness post, 24 feet north of the center of State Line Road, and 4 feet east of the southwest edge of a wooded area. (NOTE 11b)

Reference mark 2 is a standard disk stamped DICK NO. 2 1974 set in the top of a 10-inch round concrete monument which is flush with the surface. It is 72 feet northeast of the witness post, 23 feet north of the center of State Line Road, and 7 feet east of a 30-inch tree. (NOTE 11b)

The azimuth mark is a standard reference mark disk stamped DICK NO. 3 1974 set in the top of a 12-inch round concrete monument which is flush with the surface. It is 60 feet northeast of a powerline pole numbered 19, 17 feet north of the center of State Line Road, and 2 feet east of a witness post. (NOTE 11b)

The Maryland-Delaware Boundary Monument number 6 was established at this date, see description thereof.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION DIVISION

NAME OF STATION DIVISION

STATE DELAWARE

YEAR 1974

SECOND ORDER

SOURCE G-15790

GEODETIC LATITUDE	38 27 04.24101	ELEVATION	1.2 METERS
GEODETIC LONGITUDE	75 04 12.60480		4 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	599,235.64	164,490.06
MD	1900	1,352,643.31	230,845.32

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $S \sin \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From nadir)	PLANE AZIMUTH (From nadir)	CODE
DIVISION RM 3	166 51 53.0	166 38 57	0700
DIVISION RM 3	166 51 53.0	165 39 13	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DIVISION

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles north of Ocean City

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	NNW	(0.2 mile)		00 00-00
FENWICK ISLAND L H 1909	E	40.16	12.242	102 48 41.8
RM 1	S	19.20	5.851	187 25 54
BOUNDARY MONUMENT 1	S	62.06	18.916	193 05 17.5
RM 2	NNW	87.59	26.697	303 43 09

The station and all marks were recovered and found in good condition as described. The distance and direction to all marks checked the 1974 observations.

This Maryland-Delaware Boundary Monument number 1 was set below a manhole to the south of this station, see description thereof.

NOAA FORM 76-39  
(11-70)

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION DIVISION  
NEAREST TOWN Fenwick Island  
CHIEF OF PARTY Lt. Lewis A Lapine  
YEAR 1974  
DESCRIBED BY: R.K. Moore

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK 1.46 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK	OBJECT	DISTANCE		DIRECTION
		FEET	METERS	
1b - SURFACE STATION MARK	FENWICK ISLAND 1932 RM 5	4442.32	1354.03	0 00 00.00
7a - UNDERGROUND STATION MARK	(Electronic Dist.)			
	RM 1	40.18	12.243	83 26 05
11b - RM 2	NNW	62.07	18.917	199 43 51
11b - RM 3 (Azi. Mk.)	NNW	0.2 mile	256 00	23.8
	RM 1 to RM 2	87.59	26.698	

The station is located about 3 miles north of Ocean City, 0.8 mile west of Fenwick Island, on road right-of-way and near the Maryland-Delaware State line.

To reach the station from the junction of State Roads 14 and 54 in Fenwick Island, go west on State Road 54 for 0.75 mile to Jefferson Avenue on the left. Turn left and go south-southwest on Jefferson Avenue for 0.1 mile to Hayes Avenue on the right. Turn right and go west on Hayes Avenue for 0.15 mile to powerline pole number 15 and the station on the right, at the end of Hayes Avenue.

To reach RM 3 (Azi. Mk.) from the junction of State Road 54 and Jefferson Avenue, go west on State Road 54 for 0.3 mile to the mark on the left.

Station marks are standard disks stamped DIVISION 1974. The station disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 43 feet southwest of the southeast corner of a house, 18 feet north of the center of Hayes Avenue and 3 feet southeast of powerline pole number 15. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped DIVISION NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 22 feet south of the center of Hayes Avenue and 4 feet west of a metal witness post.

Reference mark 2, a standard disk stamped DIVISION NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 57 feet west of the southwest corner of the house and 2 feet south-southwest of powerline pole number 16.

Reference mark 3, a standard disk stamped DIVISION NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 34 feet southwest of the centerline of State Road 54 and 14 feet northeast of powerline pole number 69A1A-10. The mark serves as an azimuth mark.

SEPTEMBER 1981

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DUMP  
NEAREST TOWN: Hebron  
CHIEF OF PARTY: L.A. Lapine  
STATE: Maryland  
COUNTY: Wicomico  
QUADRANGLE NO.: 380753  
YEAR: 1974  
DESCRIBED BY: H. S. Murphy

OBJECT	DISTANCES		BEARING		FEET		METERS		DIRECTION	
	BEARING	DISTANCE	BEARING	DISTANCE	FEET	METERS	BEARING	DISTANCE	FEET	METERS
11b RM 1 (Tension 5 kgs.)	NE	48.28	SE	70.28	14.718	4.422	00 00	00.0	00.0	0.0
11b RM 2 (Tension 5 kgs.)	SE	70.28	SE	70.28	21.422	6.542	102 43	20.5	20.5	6.2

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.55 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1.35 METERS.  
1b SURFACE STATION MARK. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION

11b RM 1 (Tension 5 kgs.)  
11b RM 2 (Tension 5 kgs.)  
No measurement between reference marks due to brush on line.  
The station is located about 3 1/2 miles west of Delmar, Delaware.  
3 1/2 miles north of Hebron, Maryland, 0.6 mile east of the Maryland-Delaware State Line Corner and on the Highway 54 right-of-way.  
To reach the station from the railroad crossing and State Highway 54 in Delmar, Delaware, go west on State Highway 54 for 0.2 mile to a Y fork. Turn left and continue west on paved road for 0.35 mile to a Y fork. Continue ahead to the right westerly on paved road for 1.05 miles to a paved road right and end of pavement. Continue ahead west on sand road for 1.05 miles to a T-road junction. Turn left and go south on paved road for 0.3 mile to a crossroad. Turn right and go west on paved road for 1.05 miles to a side road left and the entrance to County Dump on the right. Turn right and go north on sand road through the dump for 0.3 mile to the station on the left.

The station marks are standard disks stamped DUMP 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 13 feet northwest of the center of a sand road, 10.5 feet southwest of a 16-inch pine tree, 6 feet northeast of an 18-inch pine tree and 2.5 feet southwest of a metal witness post with sign. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped DUMP NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 47 feet east of the metal witness post, 42 feet south of a 10-inch pine tree and 12 feet southeast of the center of a sand road.

Reference mark 2, a standard disk stamped DUMP NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 6 inches above the ground surface. It is 72 feet south of the metal witness post, 61 feet northeast of a 14-inch pine tree and 12 feet east-southeast of the center of the sand road.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DUMP  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1974  
STATE: Maryland  
COUNTY: Wicomico  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3-1/2 miles west of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	DISTANCES		BEARING		FEET		METERS		DIRECTION	
	BEARING	DISTANCE	BEARING	DISTANCE	FEET	METERS	BEARING	DISTANCE	FEET	METERS
RM 3 E-W No. 32 1976-1981 Boundary Monument 32 BORY. MON. 32 to E-W No. 32	WNW	74.63	NNE	247.62	22.747	6.839	00 00	00.0	00.0	0.0
	NNE	158.78	NNE	158.78	75.476	22.747	91 57	39.8	39.8	12.1
	NNE	88.84	NNE	88.84	48.397	14.718	91 57	41.0	41.0	12.5

DUMP TO RM 3 (Polaria Azimuth) = 108° 27' 29"2

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DUMP  
STATE: MARYLAND  
YEAR: 1974  
SOURCE: G-15790  
ELEVATION: 13.1 METERS  
43 FEET  
SECOND ORDER

GEODETIC LATITUDE GEODETIC LONGITUDE		ELEVATION		ELEVATION	
38 27	28.49702	75 38	54.95514	13.1	43
STATE COORDINATES (Feet)					
STATE & ZONE	CODE	A	Y	ELEVATION	
MD	1900	1,186,977.29	230,321.79	+ 0	50 54
DE	0700	433,581.96	166,840.84	- 0	08 39

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B. LUMD. 91 FORMULA NEGLECTING THE SECOND TERM

TO STATION ON OBJECT		GEODETIC AZIMUTH (from true)		PLANE AZIMUTH (from true)		CODE	

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station and all marks were recovered as described and found in good condition.  
Boundary Monument 32 was established on this date, see description thereof.  
E-W No. 32 is a standard National Geodetic Survey Disk set on line between Boundary Monuments 25 and 35 in 1976-1981.



## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: FENWICK ISLAND  
ESTABLISHED BY: C. D. H.  
RECOVERED BY: R. W. Tomlinson

YEAR: 1932  
STATE: Delaware  
YEAR: 1962  
COUNTY: Sussex

HEIGHT OF TELESCOPE ABOVE STATION MARK 31.65 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 24.0 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
MASSEY 1909 Fenwick Island U. S. Navy Tower Azimuth mark Coast Guard Mark Reference mark No. 2 Fenwick Island Lighthouse 1909 Reference mark No. 3 (azimuth mark) Reference mark No. 4	E N W W	Approx. 0.15 mile		0° 00' 00.0" 19 55 37.7 111 06 00.9 274 16 00.9 275 32 37.0 291 23 46.1 307 46 41.7 345 13 53.6

The station mark, reference marks No. 2 and No. 3 were recovered as described and No. 3 was as described. No. 2 in top of the Boundary Monument leans some and is loose in the ground, this mark could not be measured to, because of a hedge row and a fence, which is around the Lighthouse. Reference mark No. 3 was destroyed on this date as it was no longer visible from the ground. A new azimuth mark was established.

The Coast Guard mark could not be measured to, because of hedge row and fence around the Lighthouse. The Lighthouse could not be measured to, because of house now in line. Reference mark No. 1 was searched for but not found. It is believed to have been destroyed. A new reference mark No. 4 was established on this date.

The station is now on property owned by Mrs Evert Long, who lives in Selbyville, Delaware.

To reach the station from the junction of State Highways 14 and 26 in Bethany Beach, Delaware: go south on State Highway 14 for 0.28 miles to a side road right, just north of State Line signs. Continue south on State Highway 14 for 0.06 mile to powerline pole No. 156 A, a standard metal witness post and the mark on the left, east, side of the highway. Turn right and go west on a blacktop road for 0.15 mile to a private driveway on the left, turn left and go south on the private driveway for 0.06 mile to a large frame house the Lighthouse and the station to the left of the house.

Reference mark 4, a standard disk stamped FENWICK ISLAND NO 4 1932, is set in the top of a 10-inch square concrete monument flush with the surface of the ground. It is 65.7 feet northeast of the northeast corner of house and 11.0 feet east of the centerline of driveway and about station elevation. Note 11a.

The azimuth mark, a standard disk stamped FENWICK ISLAND 1932 RESET 1962, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 150.0 feet south of the State line and centerline of a gravelled road running east, 55.0 feet east of the centerline of State Highway 28, 1.0 feet northwest of a standard metal witness post and marker and 1.3 feet west of powerline pole No. 156. Note 16a.

NAME OF STATION: FENWICK ISLAND  
ESTABLISHED BY: Lewis A. Lapine  
RECOVERED BY: Lewis A. Lapine  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: North edge of Fenwick Island,  
HEIGHT OF TELESCOPE ABOVE STATION MARK 31.65 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 24.0 METERS.

YEAR: 1932  
STATE: Delaware  
YEAR: 1974  
COUNTY: Sussex

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
FENWICK ISLAND 1932 RM 5 Traverse Distance	SE	(84.04)	25.615	

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FENWICK ISLAND  
STATE: DELAWARE  
YEAR: 1932  
SECOND ORDER #

SOURCE G-15790

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	2.91 METERS	9.5 FEET
38 27 04.25204	75 03 17.39000			

STATE COORDINATES (feet)

STATE & ZONE	CODE	X	Y	PLAN AZIMUTH (from north)	CODE
DE	0700	603,628.23	164,508.06	+ 0 13 30	
MD	1900	1,357,034.78	230,939.65	+ 1 13 15	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
FENWICK ISLAND RM 3	115 21 50.2	115 08 20	0700
FENWICK ISLAND RM 3	115 21 50.2	114 08 35	1900
FENWICK IS AZ MK	278 41 09.6	278 27 40	0700
FENWICK IS AZ MK	278 41 09.6	277 27 54	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF JUN 1976

LEVELLING BY CGS

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

The station mark, reference mark 2, Coast Guard mark and the azimuth mark were recovered and found in good condition as described in 1962. Reference mark 4 was searched for but was not recovered at this date. It is believed that the mark has been destroyed when the trailer park was established. A new reference mark 5 was established at this date. No observations or measurements to the reference marks were taken at this date due to a house trailer over the station mark. A tower was erected over reference mark 5 and all observations taken. A traverse distance was made to reference mark 5. For additional information see description FENWICK ISLAND 1932 RM 5.



SEPTEMBER 1981

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: FREEDOM STATE: Delaware COUNTY: Sussex  
NEAREST TOWN: Delmar, Delaware QUADRANGLE NO.: 380753  
CHIEF OF PARTY: Lewis A. Lapine YEAR: 1974 DESCRIBED BY: R. K. Moore

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK 1.55 METERS. † HEIGHT OF LIGHT ABOVE STATION MARK 1.55 METERS.		DISTANCES AND DIRECTIONS TO NEAREST MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
1b - SURFACE STATION MARK	OBJECT	BEARING	DIRECTION
7a - UNDERGROUND STATION MARK	OBJECT	FEET	DIRECTION
Desq. RM 3 (Az. Mk.)	W	0.4 mile	0 00 00.00
11b RM 2	NW	55.40	43 13 59
11b RM 1	NE	39.65	129 57 22
RM 1 to RM 2		66.24	20.191

The station is located in the town of Delmar, Delaware and on land owned by the town. Permission was granted to establish the station by Mr. Samuel J. Mitchell, Clerk-Treasurer, 14 East State Street, Delmar, Delaware, 19940, telephone number 301-896-2777.

To reach the station from the railroad crossing and State Road 54 in Delmar, go east on State Road 54 for 0.4 mile to the city park and the station on the left.

Station marks are standard disks stamped FREEDOM 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 34 feet southeast of a granite monument, 28 feet north of the centerline of State Road 54, 9 feet south of a 24-inch pine tree and 8 feet northwest of a 20-inch pine tree. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped FREEDOM NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 56 feet north of the centerline of State Road 54, 45 feet south-southwest of a 22-inch pine tree and 37 feet west of a 30-inch oak tree.

Reference mark 2, a standard disk stamped FREEDOM NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 64 feet north of the centerline of State Road 54, 35 feet southwest of the 30-inch oak tree and 22 feet northwest of the granite monument.

Reference mark 3, a standard disk stamped FREEDOM NO 3 1974, is cemented in a drill hole in the center of a sidewalk. It is 68 feet east of the center of Penna Ave., 28.6 feet west of the northwest corner of the Bank Of Delmar and 26 feet south of the centerline of State Road 54.

To reach reference mark 3 from the station, go west on State Road 54 for 0.4 mile to the mark on the left. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: FREEDOM  
ESTABLISHED BY: C.L.N. YEAR: 1976 STATE: Delaware BENCH MARK ALSO ☐  
RECOVERED BY: C.L. Novak YEAR: 1981 COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1/2 mile east of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
OBJECT	BEARING
FREEDOM RM 3 (AZ MK) 1974	W
RM 2	NW
E-W No. 28, 1976-1981	NNW
RM 1	NE
BOUNDARY MONUMENT 28	S
RM 1 to RM 2	
	FEET
	DIRECTION
	0 00 00.00
	43 13 58
	81 56 54.5
	129 58 05
	272 22 33.6
	20.191

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FREEDOM  
STATE: DELAWARE  
SOURCE: G-15790  
YEAR: 1974  
SECOND ORDER

GEODETIC LATITUDE	38 27 21.31348	ELEVATION	15.7 METERS
GEODETIC LONGITUDE	75 34 19.95337		52 FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	455,456.27	166,068.14
MD	1900	1,208,861.22	229,928.17

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT		GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
FREEDOM RM 3		89 34 18.3	89 40 06	0700
FREEDOM RM 3		89 34 18.3	88 40 32	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station mark and all reference marks were recovered as described and found in good condition. Boundary Monument 28 was set on this date, for additional information, see the description thereof.

E-W No. 28 is a standard National Geodetic Survey station disk which was set on line between Boundary Monumenta 25 and 35 in 1976-1981.

Additional measured distances:

	feet	meters
BDRY. MON. 28 to RM 1	18.882	61.95
BDRY. MON. 28 to RM 2	22.770	74.70
E-W No. 28 to RM 1	21.564	70.74
E-W No. 28 to RM 2	17.944	58.87

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GREYERS  
NEAREST TOWN: Fenwick Island  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Del., Md. Lines: Del. Sussex Del.  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: R.K. Monte

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK 1.47 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 2.4 METERS.		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
	SURFACE-STATION MARK	UNDERGROUND-STATION MARK	OBJECT	BEARING	DISTANCE FEET	DIRECTION
1b			RM 3 (Azi. Mk.) (Elec. Dist.)	SW	1281.45	0 00 00.00
7a			RM 2	NW	42.77	85 18 26
			RM 1	S	44.99	350 15 50
			RM 1 to RM 2		64.71	

The station is located about 2.8 miles west of Fenwick Island, 2.4 miles southeast of Johnson, 1.5 miles south-southeast of Williamsville and on road right-of-way.

To reach the station from the junction of State Roads 14 and 54 in Fenwick Island, go west-northwest and southwest on State Road 54 for 4.15 miles to a side road left and the Sound Methodist Church on the left. Turn left and go southeast on a paved road for 0.7 mile to a T-road and a stop sign. Turn left and go southeasterly on a paved road for 0.5 mile to a side road right. Turn right and go southwesterly on a paved road for 0.3 mile to the station on the left. Continue southwesterly on the paved road for 0.25 mile to reference mark 3 on the left.

Station marks are standard disks stamped GREYERS 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 22 feet southeast of the center of the paved road, 3 feet west of a metal witness post and 2 feet northwest of a fence. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped GREYERS NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 25 feet southeast of the center of the paved road and 1 foot northwest of the fence.

Reference mark 2, a standard disk stamped GREYERS NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 21 feet northwest of the center of the paved road and 2 feet southeast of the edge of a cultivated field.

Reference mark 3, a standard disk stamped GREYERS NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 25 feet southeast of the center of the paved road, 4.2 feet southwest of a metal witness post and 2 feet northwest of a fence. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: GREYERS

ESTABLISHED BY: L.A.L. YEAR: 1974 STATE: Delaware

RECOVERED BY: C.L. Novak YEAR: 1976 COUNTY: Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 1/2 miles south of Williamsville

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK

OBJECT	BEARING	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
		FEET	DIRECTION	FEET
RM 3 AZ MK (VG)	SW	(1 1/4 mile)	0 00 00.00	
RM 2	NW	42.77	13.035	85 18 26
BOUNDARY MONUMENT 3	SW	44.99	13.713	349 56 44.2
RM 1	S	44.99	13.711	350 15 56
RM 1 to RM 2		64.73	19.720	

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION GREYERS

STATE DELAWARE

YEAR 1974

SECOND ORDER

SOURCE G-15790

GEODETIC LATITUDE	38 27 05.17182	ELEVATION	2.4 METERS
GEODETIC LONGITUDE	75 06 28.52180		8 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	588,422.52	164,545.78
MD	1900	1,341,831.15	230,713.13
			+ 0 11 31
			+ 1 11 15

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (Feet)	PLANE AZIMUTH (Feet)	CODE
GREYERS RM 3		42 59 30.0	42 47 59	0700
GREYERS RM 3		42 59 30.0	41 48 15	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

The station and all marks were recovered and found in good condition as described in the 1974 description. The distance and direction to all marks checked the 1974 observations.  
The Maryland-Delaware Boundary Monument number 3 was established at this date, see description thereof.

NOAA FORM 76-39  
(11-70)  
(FORMERLY CGS FORM 525)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GUMBORO  
NEAREST TOWN: Pittsville  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Md.-Del.-Line  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: R. K. Moore

ID	OBJECT	HEIGHT OF TELESCOPE ABOVE STATION MARK		HEIGHT OF LIGHT ABOVE STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
		FEET	METERS	FEET	METERS	BEARING	DIRECTION
11b	NORTH FORK (Electronic Dist.)	5653.46	1723.196	0	00	00	00.00
11b	RM 1	59.66	18.184	289	31	18.1	
11b	RM 2	63.44	19.335	359	38	53	
	RM 1 to RM 2	70.78	21.575				

The station is located about 4 miles north-northwest of Pittsville, 2 miles southwest of Gumboro, 2 miles west of Bethel and on road right-of-way.

To reach the station from the Ayers Methodist Church in Pittsville, Maryland, go north on Maryland State Road 353 for 4.0 miles to the junction with Delaware State Road 54 and the Maryland-Delaware State Line and the station in the southeast angle of the intersection. 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 81 feet east-northeast of the Maryland-Delaware State Line sign, 37 feet east-southeast of the center of the intersection, 14 feet west of a field road and 7 feet north of a ditch. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped GUMBORO NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 67 feet northeast of the center of the intersection, 38 feet north of the center of a paved road and 6 feet east of a sign BETHEL CHURCH.

Reference mark 2, a standard disk stamped GUMBORO NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 17 feet south of the center of the paved road and 6 feet north of a ditch.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: GUMBORO

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 9 miles east of Delmar

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET

YEAR: 1974

STATE: Maryland

COUNTY: Wicomico

HEIGHT OF LIGHT ABOVE STATION MARK: 5 FEET

BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 1	NNE	59.65	18.182	0 00 00.00
RM 2	E	63.44	19.333	70 07 33
BOUNDARY MONUMENT 19	N	(110.39)	33.648	340 57 14.8
RM 1 to RM 2 (slope)		70.79	21.575	
BOUNDARY MONUMENT to RM 1		57.41	17.498	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GUMBORO

STATE: MARYLAND

YEAR: 1974

SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 07.09315	ELEVATION	14.0 METERS
GEODETIC LONGITUDE	75 23 38.47502		46 FEET

STATE COORDINATES (feet)

STATE & ZONE	CODE	X	Y	B (in $\Delta$ , $\theta$ - ANGLES)
MD	1900	1,259,907.48	229,337.73	+ 1 00 29
DE	0700	506,485.58	164,592.79	+ 0 00 51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B$  (in  $\Delta$ ,  $\theta$  - FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
NORTH FORK	270 00 01.8	268 59 33	1900
NORTH FORK	270 00 01.8	269 59 11	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

The station and all marks were recovered and found in good condition as described in the 1974 description. The distances and directions to all objects were within close agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 19 was set at this date, see description thereof.



## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
(11-70)  
(FORMERLY C-909 FORM 1951)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: <b>HALL</b>	STATE: <b>Delaware</b>	COUNTY: <b>SUSSEX</b>
NEAREST TOWN: <b>Williamsville</b>	QUADRANGLE NO.: <b>380752</b>	DESCRIBED BY: <b>R.K. Moore</b>
CHIEF OF PARTY: <b>Lewis A. Lapine</b>	YEAR: <b>1974</b>	

NOTE: SURFACE STATION MARK	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
1b - FRONT OF TELESCOPE ABOVE STATION MARK 32.12 METERS					
11b - RM 1	FENWICK ISLAND 1932 RM 5	ESE	77.41	23.593	0 00 21.00
11b - Desc. BOUNDARY MONUMENT 5 (Trav. Dist.)		WSW	(52.13)	16.193	23 58 09.5
11b - RM 2		NNW	128.56	(39.185)	260 44 06.3
11b - RM 3 (Az. Mk.)			0.2 mile	835.00	36.3

No measurements between the RMs due to heavy brush on line.<sup>x</sup>  
The station is located about 5 miles east of Seabysville, 4.5 miles west of Fenwick Island, 3 miles east-northeast of Bishopville, 0.7 mile south-southwest of Williamsville and on land owned by Mr. Rallie Hall, Seabysville, Delaware, telephone number 436-8808. Mr. Hall lives in the house trailer across the road from the station.<sup>x</sup>  
To reach the station from Boyds Store in Williamsville, go southerly on a paved road for 0.6 mile to a side road left. Turn left and go east on a paved road for 0.05 mile to an opening in a fence on the right. Turn right and go southerly across an open field for 0.05 mile to a fence corner and the station.<sup>x</sup>

Station mark, a standard disk stamped HALL 1974, is set in the top of a 12-inch cylindrical concrete monument that is 18 inches below the ground surface. It is 33 feet north of a fence, 32 feet northwest of a 12-inch oak tree, 28 feet east of a fence and 24 feet northeast of a 7-inch pine tree. No underground disk was established at this station.<sup>x</sup>

Reference mark 1, a standard disk stamped HALL NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 21 feet west-northwest of a 16-inch tree, 1.6 feet northeast of a metal witness post and 1.5 feet north of a fence.<sup>x</sup>

Reference mark 2, a standard disk stamped HALL NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 4 feet east of a 12-inch pine tree, 2.4 feet south of a metal witness post and 1 foot east-southeast of a fence.<sup>x</sup>

Reference mark 3, a standard disk stamped HALL NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 33 feet northwest of the northwest corner of a tin shed, 2.5 feet southwest of a fence and 2 feet west-southwest of a metal witness post. The mark serves as an azimuth mark.<sup>x</sup>

Boundary Monument number 5, a 6 by 12 inch granite monument with a chiseled cross in the top and projects 2.4 feet above the ground surface. It is 14 feet east of an 18-inch oak tree and 10 feet southwest of the fence corner.<sup>x</sup>

To reach reference mark 3 from the opening in the fence, go east on the paved road for 0.05 mile to a driveway on the left. Turn left and go north on the driveway for 0.05 mile to a fence line, turn right and go east for 0.1 mile to the mark on the left.<sup>x</sup>

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **HALL** YEAR: **1974** SECOND ORDER  
STATE: **DELAWARE**

SOURCE: **G-15790**

GEODETIC LATITUDE	38 27 04.21140	ELEVATION	2.9 METERS
GEODETIC LONGITUDE	75 08 23.25742		10 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	579,295.12	164,419.61
MD	1900	1,332,707.56	230,428.43
			+ 0 10 20
			+ 1 10 03

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta \cos \Delta \theta$  FORMULA SELECTING THE SECOND TERM.

STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	245 08 01.6	244 57 42	245 08 01.6	243 57 58	
HALL RM 3					0700
HALL RM 3					1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **HALL** YEAR: **1974** STATE: **Delaware** BENCH MARK(S) ALSO ☐  
ESTABLISHED BY: **L.A.L.** YEAR: **1976** COUNTY: **Sussex**  
RECOVERED BY: **C.L. Novak**  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: **3 miles east-northeast of Bishopville**

Detailed statement as to the fitness of the original descriptions; including marks found, samplings, changes made, and other pertinent facts:

The station and all marks were recovered and found in good condition as previously described.

R



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-39  
(12-70)  
PREVIOUS EDITIONS OBSOLETE

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION HUDSON  
NEAREST TOWN Fenwick Island  
CHIEF OF PARTY: Lewis A. Lapine  
STATE Md.-Del. Line  
COUNTY Worcester Md.  
Sussex Del.  
DATE 1974  
DESCRIPTION BY H. S. Murphy

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION HUDSON  
STATE DELAWARE  
YEAR 1974  
SECOND ORDER

SOURCE G-15790

STATION	OBJECT	BEARING		DISTANCE		DIRECTION
		FEET	METERS	FEET	METERS	
11b RM 3 (AZ. MK.) (Electronic Dist)	NW	1061.34	323.518	0	00	00
11b RM 1	SE	43.98	13.405	163	38	13
11b RM 2	W	30.70	9.352	301	44	39
RM 1 to RM 2			69.91	21.306		

The station is located about 3.5 miles east-northeast of Bishopville, 3.5 miles west of Fenwick Island, 0.8 mile southeast of Williamsville, on road right-of-way and near the Maryland-Delaware State line.

To reach the station from the junction of State Road 14 and 54 in Fenwick Island, go west-northwest and southwest on State Road 54 for 4.15 miles to a side road left and the Sound Methodist Church on the left. Turn left and go southeasterly on a paved road for 0.7 mile to a T-road and a stop sign. Turn left and go southeasterly on a paved road for 0.45 mile to a side road right. Turn right and go southeasterly on a paved road 1.1 miles to Rollic Road, continue westerly on paved road for 0.05 mile and the station on the left. Continue westerly on the paved road for 0.3 mile to reference mark 3 on the left.

Station mark, a standard disk stamped HUDSON 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 30.5 feet south-southeast of a powerline pole, 19 feet south-southwest of the center of the paved road, 1.9 feet southwest of a 10-inch oak tree and 1.2 feet northeast of a fence corner. No underground disk was established.

Reference mark 1, a standard disk stamped HUDSON NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 74 feet southeast of the center of the paved road, 59 feet northwest of the fence corner and 17 feet southwest of the center of the paved road.

Reference mark 2, a standard disk stamped HUDSON NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 40 feet southwest of the center of the paved road, 23 feet south-southwest of the powerline pole with transformer and 1 foot northwest of the fence.

Reference mark 3, a standard disk stamped HUDSON NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 52 feet northeast of the northeast corner of a barn, 31 feet west of the center of the paved road and 14 feet southwest of a powerline pole number 20. The mark serves as an azimuth mark.

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	
		FEET	METERS
38 27 06.19703	75 07 20.11211	1.3	4

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	584,318.61	164,433.73
MD	1900	1,337,729.92	230,529.81

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (OR  $\Delta$ )  $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		CODE
	PLANE AZIMUTH	GEODETIC AZIMUTH	
HUDSON RM 3	141 29 25.5	141 18 26	0700
HUDSON RM 3	141 29 25.5	140 18 43	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE. TRIANGULATION STATION

NAME OF STATION: HUDSON  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3/4 mile southeast of Williamsville  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

NAME OF STATION: HUDSON  
YEAR: 1974  
STATE: Delaware  
COUNTY: Sussex  
BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	NW	(0.3 miles)	0	00
RM 1	SE	43.97	13.402	163
BOUNDARY MONUMENT 4	S	31.13	9.489	218
RM 2	W	30.68	9.352	301
PM 1 to RM 2 (slope)		69.90	21.304	44

The station and all marks were recovered and found in good condition as described in the 1974 description. The distances and directions to all marks checked the 1974 observations.  
The Maryland-Delaware Boundary Monument number 4 was established at this date, see description thereof.

## HORIZONTAL CONTROL DATA

SEPTEMBER 1981  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: HURLEY  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. NOVAK  
YEAR: 1974  
STATE: Maryland  
COUNTY: Wicomico  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2-1/4 MILES WEST OF Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.  
BENCH MARK ALSO ☐

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HURLEY  
STATE: MARYLAND  
YEAR: 1974  
SOURCE: G-15790  
SECOND ORDER

OBJECT	BEARING		DISTANCE		DIRECTION
	FEET	METERS	FEET	METERS	
HURLEY RM 3 (AZ MK) 1974	SH	(1/2 mile)	0	00	00:00
BOUNDARY MONUMENT 31	NNE	36.04	10.986	136	39 08:9
E-W No. 31 1976-1981	NNE	168.65	51.405	141	31 42:2
RM 1	NNE	40.05	12.207	160	32 22
RM 4	ENE	28.33	8.639	210	24 13
RM 1 to RM 4		30.72	9.364		
RM 1 to BOUNDARY MONUMENT 31		16.23	4.947		
RM 4 to BOUNDARY MONUMENT 31		39.11	11.921		

In the 1981 survey, the station surface mark was found out of position but the sub-surface marker was recovered and found undisturbed. The surface mark was reset back in its original location. Reference mark one and the azimuth mark were recovered and found in good condition. Reference mark two was found destroyed. A new reference mark four and Boundary Monument 31 were established on this date.  
A complete new description of the station follows.

The station is located 7 miles northwest of Salisbury, 4-1/2 miles northeast of Hebron and on road right-of-way.

To reach from the point where State Highway 54 crosses the railroad in Delmar, go west on State Highway 54 for 0.2 mile to a fork. Keep left and continue west on Waller Road for 0.35 mile to a fork. Keep right and continue west on a paved road for 1.7 miles to the station on the left.

The station surface mark is a standard disk stamped HURLEY 1974 1981, set in the top of a 12-inch round concrete monument which projects 6-inches. The sub-surface disk is set in a 6-inch mass of concrete about 2 feet below the surface and it is stamped HURLEY 1974. They are 37.5 feet south of a witness post, 45 feet southwest of the southwest edge of a small wooded area, 18.5 feet south of the center of the road, 10.0 feet southwest of the south edge of a 24-inch culvert and 1.2 feet north of a witness post. (NOTE 1b 7a)

Reference mark 1 is a standard disk stamped HURLEY NO 1 1974, set in the top of a 12-inch round concrete monument which projects 2-inches. It is 41 feet northeast of a witness post, 18.5 feet north of the center of the road, 16.5 feet east of the witness post, 7.7 feet east of the north end of the 24-inch culvert and 5 feet southwest of the southwest edge of the wooded area. (NOTE 11b)

Reference mark 4 is a standard disk stamped HURLEY 1974 NO 4 1981, set in the top of a 10-inch round concrete monument which is 1-inch below the surface. It is 40.0 feet southeast of the witness post, 18.5 feet east of the culvert and 10 feet south of the center of the road.

GEODETIC LATITUDE:	38 27 26.27218	ELEVATION	13.9 METERS 46 FEET
GEODETIC LONGITUDE:	75 37 22.14920		
STATE COORDINATES (FEET)			
STATE & ZONE	COORD	X	Y
MD	1900	1,194,362.14	230,207.07
DE	0700	440,963.88	166,598.22
			# HUR Δ, # ANGLE *
			+ 0 51 52
			- 0 07 42

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  HUR Δ  $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From meridian)	PLANE AZIMUTH (From meridian)	CODE
HURLEY RM 3	46 00 31.3	45 08 40	1900
HURLEY RM 3	46 00 31.3	46 08 13	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

The azimuth mark is a standard reference mark disk stamped HURLEY NO 3 1974, set in the top of a 12-inch round concrete monument which projects 2-inches. It is 41 feet southeast of the center of the intersection of Jersey Road and Waller Road, 6 feet south-southwest of a powerline pole numbered 48205 96317 74X35, 4 feet north-northeast of a street sign "JERSEY ROAD" and 1.1 feet northeast of a witness post. (NOTE 11b)

To reach the azimuth mark from the station, go west on the paved road for 0.3 mile to a T-intersection. Turn left and go south on Jersey Road for 0.3 mile to a crossroads and the mark in the southeast angle of the intersection.

For additional information see the description of Boundary Monument 31.  
E-W No. 31 is a standard National Geodetic Survey disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.

The 1974 electronic distance measurement from HURLEY to RM 3 = 793.880 m.

## HORIZONTAL CONTROL DATA

**JUL 1977**  
**U. S. DEPARTMENT OF COMMERCE**  
**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY**

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **LINE**  
 ESTABLISHED BY: **C. D. M.**  
 YEAR: **1932**  
 RECOVERED BY: **L. A. Lapine**  
 YEAR: **1974**  
 NAME OF STATION: **Maryland-Delaware**  
 STATE: **State Line** SPUNCH MARK ALSO ☐  
 COUNTY: **Worcester-Sussex Line**  
 REAPPROXIMATE DISTANCE AND DIRECTION FROM NEAREST TOWN: **Approx. 4 miles north of Pottsville**  
 HEIGHT OF TELESCOPE ABOVE STATION MARK: **102.7 FEET.**  
 HEIGHT OF LIGHT ABOVE STATION MARK: **128.6 FEET.**

**R**

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	LINE	YEAR	FIRST ORDER
STATE	MARYLAND	1932	

**SOURCE: C-1895**

GEODESIC LATITUDE: OF THE LONGITUDE:	0 38 27 75 25	2 08 673 02 646	ELEVATION: SCALED	20 METERS ONLY
STATE COORDINATES (Earp)				
STATE & ZONE	CODE	N	E	$\theta = \cos^{-1} \Delta W / \Delta L$
HD	1900	1,253,209.77	229,380.59	+ 0 59 36
DE	0700	699,789.50	164,751.81	- 0 00 02

\* PLANE ALGEBRA HAS BEEN COMPUTED BY THE FORMULA DESCRIBING THE SECOND TERM.

TO STATION DISCRECY	GEODESIC ARMUTH <sup>TM</sup> (Frame scale)	PLANE ARMUTH <sup>®</sup> (Frame scale)	CODP
AZ MK RM 2. 1932 *	91 08 25.3	90 08 49	1900
AZ MK RM 2 1932 *	91 08 25.3	91 08 27	0700
AZ MK RM 2 1957 *	130 48 28.0	129 48 52	1900
AZ MK RM 2 1957 *	130 48 28.0	130 48 30	0700
AZ MK RM 4 1974	130 07 08.3	129 07 32	1900
AZ MK RM 4 1974	130 07 08.3	130 07 10	0700

\* RM 2 set in 1932 and in 1957 not recovered in 1974.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **LINE**  
 ESTABLISHED BY: **C. D. M.**  
 YEAR: **1932**  
 RECOVERED BY: **L. A. Lapine**  
 YEAR: **1974**  
 NAME OF STATION: **Maryland-Delaware**  
 STATE: **State Line** SPUNCH MARK ALSO ☐  
 COUNTY: **Worcester-Sussex Line**  
 REAPPROXIMATE DISTANCE AND DIRECTION FROM NEAREST TOWN: **Approx. 4 miles north of Pottsville**  
 HEIGHT OF TELESCOPE ABOVE STATION MARK: **102.7 FEET.**  
 HEIGHT OF LIGHT ABOVE STATION MARK: **128.6 FEET.**

**R**

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	LINE	YEAR	FIRST ORDER
STATE	MARYLAND	1932	

**SOURCE: C-1895**

GEODESIC LATITUDE: OF THE LONGITUDE:	0 38 27 75 25	2 08 673 02 646	ELEVATION: SCALED	20 METERS ONLY
STATE COORDINATES (Earp)				
STATE & ZONE	CODE	N	E	$\theta = \cos^{-1} \Delta W / \Delta L$
HD	1900	1,253,209.77	229,380.59	+ 0 59 36
DE	0700	699,789.50	164,751.81	- 0 00 02

\* PLANE ALGEBRA HAS BEEN COMPUTED BY THE FORMULA DESCRIBING THE SECOND TERM.

TO STATION DISCRECY	GEODESIC ARMUTH <sup>TM</sup> (Frame scale)	PLANE ARMUTH <sup>®</sup> (Frame scale)	CODP
AZ MK RM 2. 1932 *	91 08 25.3	90 08 49	1900
AZ MK RM 2 1932 *	91 08 25.3	91 08 27	0700
AZ MK RM 2 1957 *	130 48 28.0	129 48 52	1900
AZ MK RM 2 1957 *	130 48 28.0	130 48 30	0700
AZ MK RM 4 1974	130 07 08.3	129 07 32	1900
AZ MK RM 4 1974	130 07 08.3	130 07 10	0700

\* RM 2 set in 1932 and in 1957 not recovered in 1974.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD DEL CORNER RM 4  
ESTABLISHED BY: R.V. Tomlinson YEAR: 1962 STATE: Maryland-Delaware BENCH MARK ALSO ☐  
RECOVERED BY: Lewis A. Lapine YEAR: 1974 COUNTY: MICO Co-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: Delmar, Delaware 6.0 miles West.  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 92.1 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: 100.5 FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
COOPER 1934 RM 4			9.411	0 00 00.00
MD DEL CORNER 1932 (Traverse Dist.)	E (30.87)		24.978	41 22 48.66
RM 2	SSE	81.95		107 26 46
RM 3	SW	153.68	(66.842)	184 05 28
Azimuth Mark	W	0.3	mile	210 48 24.0
RM 2 to RM 3		156.30	(47.640)	

The station mark, reference marks 2, 3 and the azimuth mark were recovered and found in good condition. Boundary Monument Number 0 or 35-B that MD DEL CORNER 1932 disk is set, is leaning to the south as described in 1962. The horizontal directions and the distance checked the 1962 data adequate. A complete new description follows.

The station is located about 6.0 miles west of Delmar and at the southwest corner of Delaware and at the south end of the north and south line between Delaware-Maryland. It is on property owned by the State.

To reach the station from the railroad crossing, and State Road 54 in Delmar, go west on State Road 54 for 4.8 miles to a Y-fork, continue west on State Road 54 for 1.2 miles to the Maryland-Delaware Corner and the station on the right. Continue west on State Road 54 for 0.3 mile to Old Railroad Road and the azimuth mark on the left.

Station marks are standard reference mark disks stamped MD DEL CORNER MD 4 1932. The surface disk is set in the top of a 12 inch square concrete monument that is 18 inches below the ground surface. It is 105 feet north of the centerline of State Road 54, 32 feet south of an 8-inch oak tree, 26 feet west of the northwest corner of a brick pillar, 15 feet east of a cedar tree and 8 feet west-northwest of an 8-inch maple tree. The underground disk is set in the top of an irregular mass of concrete 40 inches below the ground surface. Note 11a.

Reference mark 2, a standard disk stamped MD DEL CORNER NO 2 1932, is set in the top of a 12 inch square concrete monument that is 18 inches below the ground surface. It is 26 feet north of the centerline of State Road 54, 23 feet east of a 6-inch maple tree and 21 feet west of a 4-inch maple tree. Note 11a.

Reference mark 3, a standard disk stamped MD DEL CORNER NO 3 1932, is set in the top of a 12 inch square concrete monument that projects 2 inches above the ground surface. It is 27 feet north of the centerline of State Road 54. Note 11a.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MD. DE. CORNER RM 4  
STATE: MARYLAND  
YEAR: 1962

SECOND ORDER

SOURCE: C-12731

OPPOSITE LATITUDE:	38 27 35.8687	ELEVATION:	9.3 METERS
OPPOSITE LONGITUDE:	75 41 38.8436		31 FEET

STATE COORDINATES (FTH)				
STATE & BOW	CODE	X	Y	$\theta$ 10M $\Delta$ $\theta$ 1 ANGLE
DE	0700	420,547.38	167,622.61	- 0 10 21
MD	1900	1,173,931.45	230,677.69	+ 0 49 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  10M  $\Delta$   $\theta$  1 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	AZIMUTH (From mark)		PLANE AZIMUTH (From mark)		CODE
	DE	MD	DE	MD	
AZIMUTH MARK	79 13 32.7	79 13 32.7	79 23 54	78 24 22	0700
AZIMUTH MARK	79 13 32.7	79 13 32.7	78 24 22	78 24 22	0700

Azimuth mark, a standard disk stamped MD DEL CORNER 1932 RESET 1962, is set in the top of a 12 inch square concrete monument that projects 2 inches above the ground surface. It is 55 feet south of the centerline of State Road 54, 24 feet east-southeast of the center of Old Railroad Road, 5 feet northeast of a stop sign and 1 foot east of a metal witness post. Note 16a.

MD DEL CORNER, a standard disk stamped MD DEL CORNER 1932, is cemented in a drill hole in the top of Boundary Monument Number 0 or 35-B that projects 30 inches above the ground surface. It has a 12 by 12 foot shelter erected over the monument. It is 3.8 feet south of Monument 35-A, which was established in 1760.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.



SEPTEMBER 1981

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by this  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **MAYER** STATE: **Maryland** COUNTY: **Wicomico**  
NEAREST TOWN: **Delmar, Delaware** QUADRANGLE NO.: **380753**  
CHIEF OF PARTY: **Lewis A. Lapine** YEAR: **1974** DESCRIBED BY: **R. K. Moore**

ID	SURFACE STATION MARK	OBJECT	HEIGHT OF TELESCOPE ABOVE STATION MARK		BEARING	DISTANCE		DIRECTION	METERS
			FEET	METERS		FEET	METERS		
7a	UNDERGROUND STATION MARK								
11b	RM 3 (AZ. MK.) (Electronic Dist.)	W		733.500		0	00	00.00	
11b	RM 1	E	103.70	(31.608)	178	31	36		
11b	RM 2	W	88.98	27.122	357	58	26		

No measurement between the RMs due to the angle.  
The station is located about 1.4 miles east of Delmar, 0.4 mile east of U.S. Highway 13 and on road right-of-way.  
To reach the station from the junction of U.S. Highway 13 and State Road 54 in the east edge of Delmar, go east on State Road 54 for 0.4 mile to powerline pole number 3D and the station on the right. RM 3 (AZ. MK.) is in the median of U.S. Highway 13.

Station marks are standard disks stamped MAYER 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is 1 inch below the ground surface. It is 28 feet northwest of powerline pole number 3B, 21 feet south of the centerline of State Road 54 and 5 feet east of a mail box. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.  
Reference mark 1, a standard disk stamped MAYER NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is 1 inch below the ground surface. It is 21 feet south of the centerline of State Road 54, 23 feet west of a mail box and 22 feet east-northeast of powerline pole number 3B.

Reference mark 2, a standard disk stamped MAYER NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is 1 inch below the ground surface. It is 115 feet west of powerline pole number 3B and 21 feet south of the centerline of State Road 54.

Reference mark 3, a standard disk stamped MAYER NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 48 feet north of the centerline of State Road 54, 38 feet west of the centerline of the north bound lane of U.S. Highway 13 and 36 feet east of the centerline of the south bound lane of U.S. Highway 13. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **MAYER** YEAR: **1974** STATE: **Maryland** BENCH MARK ALSO ☐  
ESTABLISHED BY: **L.A.L.** YEAR: **1981** COUNTY: **Wicomico**  
RECOVERED BY: **C.L. Novak** AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: **1-1/2 miles east of Delmar**  
HEIGHT OF TELESCOPE ABOVE STATION MARK: **5** FEET. HEIGHT OF LIGHT ABOVE STATION MARK: **FEET.**

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
MAYER RM 3 (AZ MK) 1974	W	(0.45 mile)	10.876	0 00' 00.0
BOUNDARY MONUMENT 27	N	35.68	10.876	88 39' 13.9
E-W No. 27, 1976-1981	N	110.10	33.560	89 01' 03.7
RM 1	E	103.66	31.596	178 28' 47
RM 2	W	88.92	27.101	357 58' 56

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **MAYER** YEAR: **1974** SECOND UNDER  
STATE: **MARYLAND**

SOURCE: **G-17590**

GEODETIC LATITUDE	38 27 18.59024	ELEVATION	15.5 METERS
GEODETIC LONGITUDE	75 33 00.81165		51 FEET

### STATE COORDINATES (FEET)

STATE & ZONE	CODE	X	Y	W. LONG. & ANGLE
MD	1900	1,215,160.34	229,751.94	+ 0 54 36
DE	0700	461,751.52	165,782.77	- 0 04 59

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \arcsin \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (HORIZONTAL)		PLANE AZIMUTH*		CODE
	1900	0700	1900	0700	
MAYER RM 3	93 17 37.8		92 23 02		1900
MAYER RM 3	93 17 37.8		93 22 37		0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976

In the 1981 survey, the station mark and all reference marks were recovered as described and found in good condition. Boundary Monument 27 was set on this date, for additional information, see the description thereof.  
E-W No. 27 is a standard National Geodetic Survey station disk which was set on line between Boundary Monuments 25 and 35 in 1976-1981.  
Additional measured distances:

	FEET	METERS
BDRY. MON. 27 to E-W No. 27	22.692	74.45
BDRY. MON. 27 to RM 1	33.385	109.53
BDRY. MON. 27 to RM 2	29.320	96.20
E-W No. 27 to RM 1	45.875	150.51
E-W No. 27 to RM 2	43.504	142.73

\* 1976 slope measurement.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: MELSON STATE: Md., Del. Line COUNTY: Wilcomoco Md. - Sussex, Del.  
NEAREST TOWN: Melson, Md. QUADRANGLE NO.: 380752 YEAR: 1974 DESCRIBED BY: A. G. Thacker  
CHIEF OF PARTY: Lewis A. Lapine

## ADJUSTED HORIZONTAL CONTROL DATA

NOTE:	SURFACE TELESCOPE MARK	UNDERGROUND STATION MARK	OBJECT	BEARING	FEET	METERS	DIRECTION
1	HEIGHT OF TELESCOPE ABOVE STATION MARK: 55 METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK, AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
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100							

The station is located about 5.5 miles east of Delmar, 2.2 miles south of Ward and 1 mile north of Melson and on road right-of-way.

To reach the station from the Post Office in Delmar, Delaware, go south on North First Street for 0.1 mile to the junction with Delaware State Highway 54. Turn left and go east on Highway 54 for 0.9 mile to the junction with U. S. Highway 13, continue east on Highway 54 for 4.2 miles to Melson Church Road on the right and Bench Mark ZZ 60 on the right. Continue east on Highway 54 for 0.1 mile to the station on the right.

Station marks are standard disks stamped MELSON 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 39 feet south of the center of Highway 54, 19 feet north of a 10-inch pine tree and 16 feet west-northwest of a field corner. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped MELSON NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 39 feet south of the center of the highway, 23 feet north-northeast of a 14-inch oak tree and 17 feet southeast of the center of a driveway.

Reference mark 2, a standard disk stamped MELSON NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 36 feet north of the center of the highway, 10 feet southwest of a field and 6 feet northeast of the east end of a culvert.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MELSON  
ESTABLISHED BY: L. A. L.  
RECOVERED BY: C. L. Novak  
YEAR: 1974 STATE: Maryland  
YEAR: 1976 COUNTY: Wilcomoco  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5 1/2 miles east of Delmar  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	FEET	METERS	DIRECTION
BM ZZ 60 (AZ MK) (VG)	W	0.1 mile	0.00	00.00
RM 1	W	57.51	17.530	1 39 47
RM 2	N	81.74	24.915	73 37 03
BOUNDARY MONUMENT 23	N	23.73	7.233	89 29 39.6
Unable to measure between RM's				

The station and all marks were recovered and found in good condition as described in the 1974 description. A shorter distance of 0.03 foot or 0.007 meter was noted to reference mark one. All other distances and directions were within close agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 23 was established at this date, see description thereof.

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

DEODIC LATITUDE	DEODIC LONGITUDE	ELEVATION	19.3 METERS
38 27	12.41457		63
75 28	28.55513		
STATE COORDINATES (FEET)			
STATE & ZONE	CODE	X	Y
MD	1900	1,236,825.46	229,480.20
DE	0700	483,409.08	165,135.53
			+ 0 57 27
			- 0 02 10

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B = 10R \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	DEODIC AZIMUTH (From object)	PLANE AZIMUTH* (From object)	CODE
BENCH MARK ZZ 60	91 52 23.2	90 54 57	1900
BENCH MARK ZZ 60	91 52 23.2	91 54 33	0700

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION MORRIS

STATE MARYLAND

YEAR 1974

SECOND - OTHER

SOURCE G-15790

GEODETIC LATITUDE	38 27 13.75227	ELEVATION	17.3 METERS
GEODETIC LONGITUDE	75 29 35.33390		57 FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,231,511.69	229,527.28
DE	0700	478,096.83	165,274.73

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  FOR  $\Delta$ ,  $\beta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
BENCH MARK 22 60	271 22 02.4	270 25 18	1900
BENCH MARK 22 60	271 22 02.4	271 24 54	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

The station and all marks were recovered and found in good condition as described in the previous description. The direction to all marks were within close agreement with the previous description. A shorter distance of 0.04 foot or 0.011 meter was noted to reference mark 2. All other distances and directions were within close agreement with the previous observations.  
The Maryland-Delaware Boundary Monument number 24 was set at this date, see description thereof.

1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION MORRIS

STATE: Md-Del 11inc COUNTY:

MARKS: 20m, 3m, 6m, 10m, 15m, 20m, 25m, 30m, 35m, 40m, 45m, 50m, 55m, 60m, 65m, 70m, 75m, 80m, 85m, 90m, 95m, 100m

QUADRANGLE NO. 380752

YEAR: 1974

OBSERVED BY A. G. Thacker

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	BEARING	FEET	METERS	DIRECTION
1b	SURFACE STATION MARK	1.5				
7a	UNDERGROUND STATION MARK					
	OBJECT					
DESC	22 60 1942 (BM) (AZ. MK.)		E	0.8	0.00	00 00
11b	RM 2		W	51.82	15.795	180 33
11b	RM 1		E	67.40	20.542	359 47

No measurement between the RMs due to the angle.  
The station is located about 5 miles north-northwest of Parsonbury, Maryland and 5 miles east of Delmar, Delaware, 2.5 miles south-southwest of Ward and on road right-of-way.

To reach the station from the junction of U.S. Highway 13 and State Road 54 at the east edge of Delmar, go east on State Road 54 for 3.3 miles to powerline pole number 38-A and the station on the right.  
Station marks are standard disk stamped MORRIS 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 36 feet south of the centerline of State Road 54, 16 feet north of a 10-inch oak tree and 7 feet southwest of powerline pole number 38-A. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped MORRIS NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 64 feet east of powerline pole number 38-A, 36 feet south of the centerline of State Road 54 and 17 feet north-northwest of a 12-inch oak tree.

Reference mark 2, a standard disk stamped MORRIS NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 78 feet east of a driveway, 43 feet northeast of the northeast corner of a shed and 36 feet south of the centerline of State Road 54.

Azimuth mark, a standard bench mark disk stamped 22 60 1942, is set in the top of a 4 inch square concrete monument that is flush with the ground surface. It is 35 feet south of the centerline of State Road 54, 25 feet east of the center of Nelson Church Road and 2.5 feet east-northeast of NELSON CHURCH ROAD sign.

To reach the azimuth mark from the station, go east on State Road 54 for 0.8 mile to Nelson Church Road on the right and the mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MORRIS

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1974

STATE: Maryland

COUNTY: Wicomico

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 1/2 miles east of Delmar

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE	DIRECTION
BM 22 60 (AZ MK) (VG)	E	0.8 mile	00 00
RM 2	W	51.78	180 33
BOUNDARY MONUMENT 24	N	15.784	359 47
RM 1	E	4.693	270 00
Unable to measure between RM's		20.543	359 47



## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
(11-7-70)  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: NECK  
NEAREST TOWN: Selyville  
CHIEF OF PARTY: L.A. Lapume  
STATE: Md.-Del. Line  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: H.S. Murphy

HEIGHT OF TELESCOPE ABOVE STATION MARK 27.7 METERS, HEIGHT OF LIGHT ABOVE STATION MARK 30. METERS.  
1b SURFACE STATION MARK. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION  
7a UNDERGROUND STATION MARK

OBJECT	BEARING	FEET	METERS	DIRECTION
1a LINE 1932				
11b RM 3 (Az. Mk.) (Electronic dist.)	NW	1929.681	588.174	00 00 00.0
11b RM 1 (Tension 5 kgs.)	SE	87.45	26.657	58 16 07.9
11b RM 2 (Tension 5 kgs.)	SW	94.29	28.741	31 10 28.9
RM 1 to RM 2		112.45	(34.275)	

The station is located about 5 1/2 miles west of Selyville, Delaware, 4 1/4 miles northwest of Whalesville, Maryland and 2 1/4 miles southeast of Gumboro, Delaware and on the property of the Delaware Wildlands Inc. Mr. Edmond Harvey, President of the Wildlands Inc., gave permission. Address: 1011 Washington, Street, Wilmington, Delaware.

To reach the station from the post office in Selyville, Delaware, go southwest on Church Street for 0.25 mile to a railroad crossing, continue southwest on Church Street for 0.35 mile to the junction of US Highway 113. Turn left and go south on US Highway 113 for 0.3 mile to a crossroad just after crossing the Maryland-Delaware State Line. Turn right and go west-southwest on a paved road for 1.05 miles to a crossroad. Continue southwest on paved road for 0.6 mile to a T-road junction. Turn right and go northwest on paved road for 1.25 miles to a sharp curve to the left. Continue southerly on paved road for 0.5 mile to a sand road right. Turn right and go westerly on a sand road for 1.15 mile to a wooden bridge. Continue ahead on sand road for 0.85 mile to a T-road junction. Turn right and go northerly on sand road for 0.5 mile to the station on the right.

To reach the reference mark 3 (Az. Mk.) from the station, go north on sand road for 0.15 mile to a paved road left. Turn left and go west on paved road for 0.35 mile to mark on right.

The station marks are standard disks stamped NECK 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that projects 1 inch above the ground surface. It is 29 feet east-southeast of the center of the sand road, 20.5 feet northwest of a 24-inch twin-trunk maple tree, 11.3 feet south of a 12-inch oak tree and 5.4 feet west of a metal witness post with sign.

Reference mark 1, a standard disk stamped NECK NO 1 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 13.6 feet east of a 14-inch maple tree. 5 feet southwest of a 14-inch maple tree and 2.2 feet northwest of a metal witness post with sign.

Reference mark 2, a standard disk stamped NECK NO 2 1974, set in the top of a 12-inch cylindrical concrete monument that projects 4 inches above the ground surface. It is 23.5 feet north-northeast of a 12-inch oak tree, 31 feet southwest of a 14-inch maple tree and 18 feet west of the center of the sand road.

Reference mark 3, a standard disk stamped NECK NO 3 1974, set in the top of a 12-inch cylindrical concrete monument that projects 4 inches above the ground surface. It is 25 feet southeast of a 24-inch red bud tree, 23 feet north-northeast of the center of the paved road and 3 feet east-southeast of a powerline pole number 25-22 with a transformer.

The underground station mark is a standard disk stamped NECK 1974, set in the top of an irregular mass of concrete 42 inches below the ground surface.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: NECK

STATE: MARYLAND

YEAR: 1974

SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 05.99491	ELEVATION	10.7 METERS
GEODETIC LONGITUDE	75 19 54.28999		35 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	524,320.35	164,492.10
MD	1900	1,277,760.98	229,546.47

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA, NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		PLANE AZIMUTH (From north)		CODE
	0	+	0	+	
NECK RH 3	148	55 37.5	148	52 27	0700
NECK RM 3	148	55 37.5	147	52 48	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: NECK

ESTABLISHED BY: L.A.L.

YEAR: 1974

STATE: Maryland

RECOVERED BY: C.L. Novak

YEAR: 1976

COUNTY: Worcester

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5 miles west of Selyville

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3 (AZ MK) (VG)	NW	(0.4 mile)	22.104	0 00 00.00
BOUNDARY MONUMENT 15	NW	(72.52)	22.104	9 57 23.7
RM 1	SE	87.45	26.656	176 35 17
RM 2	SW	94.29	28.741	252 54 24
RM 1 to RM 2 (around obstructions)		112.46	34.278	

The station and all marks were recovered and found in good condition as described in the 1974 description. The distance and direction to all marks checked 1974 description.  
The Maryland-Delaware Boundary Monument number 15 was established at this date, see description thereof.

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: NORMAN  
ESTABLISHED BY: C.D.H.  
RECOVERED BY: L.A. Lapine  
YEAR 1932 / STATE: Maryland  
YEAR 1976 / COUNTY: Worcester-Sussex Line  
AZIMUTH MARK: (Tenon 5 kg.)  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 102.7 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: 111.2 FEET

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
HALL	S	0.15 mi	0.24	00 00 00.0
RH 6 (Az. bk.)	S	59.79	17.25	97 19 27.6
RH 4	S	0.35 mi	0.56	98 49 12.7
Azimuth mark	WNW	96.26	29.30	173 00 39.7
RH 5 (Tenon 5 kg.)		124.45	37.93	202 09 02

The station mark, reference mark 4, reference mark 5 and the azimuth mark were recovered and found to be in good condition. Reference mark 3 was searched for and is believed destroyed. Reference mark 6 was established at this time. It is believed reference mark 4 has been moved because a difference of 7.26 meters was found. Due to the change a new description follows.\*

The station is located in the south edge of Solbyville, Delaware, in the northeast angle of a crossroads at the Maryland-Delaware State Line, on the property of Mr. William Penza, Solbyville, Delaware, Phone 302-734-9770.\*

To reach the station from the post office in Solbyville, Delaware, go southwest on Church Street for 0.25 mile to a railroad crossing. Continue southwest on Church Street for 0.35 mile to the junction of US Highway 113. Turn left and go south on US Highway 113 for 0.25 mile to the Maryland-Delaware State Line and the station on the left.\*

To reach the azimuth mark from the station, go west on a paved road for 0.35 mile to the azimuth mark on the right.\*  
To reach reference mark 6 from the station, go south on US Highway 113 for 0.15 mile to a white frame building on the right and the mark on the right.\*

The station mark, a standard disk stamped NORMAN 1932, set in a drill hole in the top of a 6 by 12-inch granite boundary line monument that projects 20-inches above the ground surface. It is 123 feet northeast of the northeast corner of a concrete building, 78.5 feet east of a 12-inch maple tree and in the south edge of a cultivated field. (Desc.)†

Reference mark 4, a standard disk stamped NORMAN NO 4 1932, is set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 136 feet north of the center of a paved road and 82 feet northeast of the northeast corner of the concrete building. (Note 11b)\*

Reference mark 5, a standard disk stamped NORMAN NO 5 1932, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 47 feet east-northeast of a powerline pole with a transformer, 28.7 feet northwest of a 12-inch maple tree and 10 feet west of the west edge of a cultivated field. (Note 11b)†

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: NORMAN (BOUNDARY MONUMENT 10)

STATE: DELAWARE - MARYLAND YEAR: 1932

FIRST ORIGIN

SOURCE: C-1895

GEODETIC LATITUDE:	38 27 03.986	ELEVATION	11 meters
GEODETIC LONGITUDE:	75 13 56.935	SCALED	****

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,306,168.26	229,878.23
DE	0700	552,749.67	164,330.39

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \sin \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK	82 55 58.6	81 49 25	1900
AZIMUTH MARK	82 55 58.6	82 49 06	0700

Reference mark 6, a standard disk stamped NORMAN 1932 NO 6 1976, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 51 feet west-southwest of a 40-inch oak tree and 39 feet east-southeast of a 40-inch oak tree. (Note 11b)†  
Azimuth mark, a standard disk stamped NORMAN 1955, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 48 feet north-northeast of a powerline pole number 20 G, 16 feet north of the center of a paved road and 4 feet south of a metal witness post with sign. (Note 16 b)†  
The boundary line monument the station mark is set in the top of is Boundary Line Monument 10.\*

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

## HORIZONTAL CONTROL DATA

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION NORTH FORK  
NEAREST TOWN Pittsview  
CHIEF OF PARTY Lewis A. Lapine  
STATE Md.-Del. Line  
QUADRANGLE NO. 380752  
YEAR 1974  
COUNTY Wicomico  
DESCRIBED BY: R. K. Moore

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
11b BETHEL RM 3 (Az. Mk.) (Ele. Dis.)	E	1598.93	467.360	0 00 00.00
11b/a GUMBORO (Electronic Distance)	NW	5653.46	1723.196	181 37 08.06
11b RM 2	NW	61.03	18.602	216 15 27.8
11b RM 1	NE	60.38	18.401	325 30 32.0
11b RM 1 to RM 2		98.96	(30.163)	

The station is located about 4 miles northeast of Pittsview, 2 miles south-southwest of Gumboro, 1 mile west of Bethel, 1 mile east of the junction of Maryland State Road 353 and Delaware State Road 54 and on road right-of-way.

To reach the station from the Ayers Methodist Church in Pittsview, Maryland, go north on Maryland State Road 353 for 4.0 miles to the junction with Delaware State Road 54 and the Maryland-Delaware State Line. Turn right and go east on a paved road for 1.05 miles to a field road on the right and the station. Continue east on the paved road for 0.5 mile to a paved crossroad and BETHEL RM 3 (Az. Mk.) on the left.

Station marks are standard disk stamped NORTH FORK 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 17 feet south of the center of the paved road and 8 feet north of the north edge of a field. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped NORTH FORK NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 20 feet north of the center of the paved road and 6 feet south of a ditch.

Reference mark 2, a standard disk stamped NORTH FORK NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 19 feet north of the center of the paved road and 6 feet south of the ditch.

Reference mark 3, a standard disk stamped BETHEL NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 43 feet northwest of the intersection of the paved road, 31 feet west of the center of the paved road and 4 feet north of a stop sign. The mark serves as an azimuth mark.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: NORTH FORK  
ESTABLISHED BY: L. A. L.  
RECOVERED BY: C. L. Novak  
AIRLINE OBSERVANCE AND DIRECTION FROM NEAREST TOWN: 8 miles east of Selbyville  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
BENCH MARK ALSO ☐  
STATE: Maryland  
COUNTY: Wicomico  
YEAR: 1976  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
BETHEL RM 3 (AZ MK) (VC)	E	(0.3 mile)	0	00 00.00
RM 2	NW	60.99	18.589	216 14 41
BOUNDARY MONUMENT 18	N	(63.47)	19.366	272 05 41.6
RM 1		60.33	18.388	325 29 59
RM 1 to RM 2		98.94	30.159	

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION NORTH FORK  
STATE MARYLAND  
YEAR 1974

SOURCE G-15790

GEODETIC LATITUDE	38 27 07.08667	ELEVATION	12.6 METERS
GEODETIC LONGITUDE	75 22 27.41041		41 FEET

## STATE COORDINATES (FPM)

STATE & ZONE	CODE	X	Y	$\theta$ (OR $\Delta$ AT ANGLE)
MD	1900	1,265,559.93	229,437.14	+ 1 01 13
DE	0700	512,139.01	164,594.13	+ 0 01 35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (OR  $\Delta$ ) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (True North)	PLANE AZIMUTH (From North)	CODE
BETHEL RM 3	268 23 37.8	267 22 24	1900
BETHEL RM 3	268 23 37.8	268 22 03	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

The station and all marks were recovered and found in good condition. The direction between all marks were within close agreement with the 1974 observations. A shorter distance of 0.05 foot or 0.013 meter was noted to reference mark one. A shorter distance of 0.04 foot or 0.013 meter was noted to reference mark 2. The Maryland-Delaware Boundary Monument number 18 was set at this date, see description thereof.



HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: RACCOON  
NEAREST TOWN: Gumboro  
CHIEF OF PARTY: L. A. Lapine  
STATE: Md., Del., Line  
QUADRANGLE NO.: 380752  
YEAR: 1974  
DESCRIBED BY: H. S. Murphy

ADJUSTED HORIZONTAL CONTROL DATA

NOTE: 1b none	HEIGHT OF TELESCOPE ABOVE STATION MARK SURFACE-STATION MARK, UNDERGROUND-STATION MARK	OBJECT	BEARING		DISTANCE		DIRECTION	
			FEET	METERS	FEET	METERS	00 00 00.0	21.5
11b	RACE RM 3 (AZ. MK.) (Elect. Dis.)		246.88	752.708				
11b	RM 2 (Tension 5 kgs.)		78.14	23.818	232	42	21.5	
11b	RM 1 (Tension 5 kgs.)		79.92	24.361	311	58	47.6	
	RM 1 to RM 2		100.75	30.709				

The station is located about 4 1/2 miles north-northeast of Parsonburg, Maryland, 4 1/2 miles northwest of Pittsville, Maryland and 3 1/4 miles southwest of Gumboro, Delaware on the State Highway right-of-way. To reach the station from the Avers Methodist Church in Pittsville, Maryland, go north on State Highway 353 for 4.0 miles to a crossroad at the Maryland-Delaware State Line. Turn left and go west on State Highway 54 for 1.3 miles to the Line Methodist Church on the right. Continue west on State Highway 54 for 2.05 miles to a track road and the station on the left.

The station mark, a standard disk stamped RACCOON 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 2 inches above the ground surface. It is 35 feet south of the center of State Highway 54, 27 feet northwest of a 14-inch oak tree, 9 feet west of the center of a sand road and 1.4 feet east of a metal witness post with sign.

No underground disk set.  
Reference mark 1, a standard disk stamped RACCOON NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 26 feet north of the center of State Highway 54, 21 feet southwest of a 10-inch oak tree and 18 feet southeast of an 8-inch pine tree.

Reference mark 2, a standard disk stamped RACCOON NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 46 feet southeast of a 16-inch pine tree, 26 feet north of the center of State Highway 54 and 24 feet southwest of an 8-inch pine tree.

Reference mark 3, a standard disk stamped RACE NO 3 1974, set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 29 feet north of the center of State Highway 54, and 2 feet southeast of a metal witness post with sign. This mark serves as an azimuth mark for this station.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: RACCOON  
ESTABLISHED BY: L. A. I.  
RECOVERED BY: C. L. Novak  
YEAR: 1976  
STATE: Maryland  
COUNTY: Wicomico  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 1/4 miles southwest of Gumboro, Delaware  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION	
		FEET	METERS	00 00 00.00	21.5
RACE RM 3 (AZ MK)	E	(1/2 mile)			
RM 2	NW	78.13	23.815	232	42
BOUNDARY MONUMENT 22	N	30.68	9.351	271	31
RM 1	NE	79.91	24.358	311	58
RM 1 to RM 2(slope)		100.74	30.706		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	ANGLE
MD	1900	1,242,519.00	229,432.44	+ 0 58 12
DE	0700	489,101.05	164,989.05	- 0 01 25

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\beta$ OR $\Delta$ OR $\delta$ FORMULA NEGLECTING THE SECOND TERM			
TOSTATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
RACE RM 3	269 51 39.1	268 53 28	1900
RACE RM 3	269 51 39.1	269 53 04	0700

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

The station and all marks were recovered and found in good condition as described in the 1974 description. The distances and direction to all marks were within close agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 22 was established below a manhole just north of this station, see description thereof.

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY,

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

104A FORM 74-39  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: RACE STATE: Md-De1-Line COUNTY: Wilcomico-Sussex  
NEAREST TOWN: Whitesville, Dela. QUADRANGLE NO.: 380752  
CHIEF OF PARTY: Lewis A. Lapine YEAR: 1974 DESCRIBED BY: R. K. Moore

OBJECT	DISTANCE		DIRECTIONS
	BEARING	FEET	
LINE 1932			
RM 2	WSW	60.01	0 00 00.00
RM 3 (Az. Mk.) (Electronic Disk)	N	18.291	155 48 45.4
RM 1	NE	180.95	181 49 49.44
		24.673	321 10 55.4

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.56 METERS; HEIGHT OF LIGHT ABOVE STATION MARK METERS.  
SURFACE STATION MARK: DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

No measurement between the RMs due to building on line.  
The station is located about 4 miles southwest of Gumboro, Delaware, 4 miles north-northwest of Pittsville, Maryland and 0.7 mile southwest of Whitesville, Delaware and on road right-of-way.  
To reach the station from the Ayers Methodist Church in Pittsville, go north on Maryland State Road 353 for 4.0 miles to the junction with Delaware State Road 54 and the Maryland-Delaware State Line. Turn left and go west on Delaware State Road 54 for 1.3 miles to the Line Methodist Church on the right, continue west on State Road 54 for 1.05 miles to Mr. R.E. Timmons mail box on the left and the station.

Station marks are standard disks stamped RACE 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 30 feet south of the centerline of State Road 54, 12 feet north of the northeast corner of a red chicken house and 7 feet southwest of Mr. R.E. Timmons mail box. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped RACE NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 54 feet east-southeast of a telephone pole and 23 feet north of the centerline of State Road 54.

Reference mark 2, a standard disk stamped RACE NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 54 feet south of the centerline of State Road 54, 11 feet south-southeast of a telephone pole and 29 feet west-southwest of the northwest corner of the chicken house.

Reference mark 3, a standard disk stamped RACE NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 29 feet north of the centerline of State Road 54 and 2 feet southeast of a metal witness post. The mark serves as an azimuth mark.

To reach reference mark 3 from the station, go west on State Road 54 for 0.5 mile to the mark on the right.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: RACE  
STATE: MARYLAND  
YEAR: 1974  
SOURCE: G-15790

SECOND ORDER

DEODETIC LATITUDE	DEODETIC LONGITUDE	STATE COORDINATES (FPM)		ELEVATION	19.9 METERS 65 FEET
		CODE	N		
38 27 10.05997	75 26 22.51798	1900	1,246,854.38	229,411.50	
		0700	493,435.49	164,892.93	

STATE & ZONE	CODE	N	Y	B (1974) Δ θ, ANGLE
MD	1900			+ 0 58 46
DE	0700			- 0 00 51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (OR  $\Delta \theta$ ) FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	DEODETIC AZIMUTH (FROM RM 3)	PLANE AZIMUTH (FROM RM 3)	CODE
RACE RM 3	93 05 18.1	92 06 32	1900
RACE RM 3	93 05 18.1	93 06 09	0700

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: RACE

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1974 STATE: Maryland

YEAR: 1976 COUNTY: Wilcomico

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles north-northwest of Pittsville

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT

BEARING

DISTANCE

FEET

METERS

DIRECTION

AZIMUTH MARK (VG) (RM 3)

BOUNDARY MONUMENT 21

RM 1

RM 2

W (0.35 mile)

N 20.53 6.258

NE 80.98 24.681

WSW 59.97 18.281

0 00 00.00

88 18 09.8

139 19 37

334 00 20

The station and all marks were recovered and found in good condition as described. The direction to all marks agreed with the 1974 observations. A longer distance of 0.03 foot or 0.008 meter was noted to reference mark 1. A shorter distance of 0.04 foot or 0.010 meter was noted to reference mark 2.  
The Maryland-Delaware Boundary Monument number 21 was established at this date, see description thereof.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
(11-77)  
(FORMERLY CGS FORM 131)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **STEEN**  
NEAREST TOWN: **Selbyville**  
CHIEF OF PARTY: **Lewis A. Lapine**  
STATE: **Del.**, **Md.**, **Lin** COUNTY: **Sussex Del.**, **Worcester Md.**  
QUADRANGLE NO.: **380752** DESCRIBED BY: **R.K. Moore**  
YEAR: **1974**

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **STEEN**  
STATE: **DELAWARE**  
YEAR: **1974**

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK: **1.63 METERS**. HEIGHT OF LIGHT ABOVE STATION MARK: **0.00 METERS**.  
DISTANCE FROM STATION MARK TO OBJECT WHICH CAN BE SEEN FROM THE STATION: **0.00 METERS**.  
DISTANCE FROM STATION MARK TO OBJECT WHICH CAN BE SEEN FROM THE STATION: **0.00 METERS**.

BEARING	FEET	METERS	DIRECTIONS
SE	1154.45	351.880	0 00 00.00
SW	24.86	7.578	65 49 49
NNE	23.59	7.193	218 24 18
	47.04	14.339	

The station is located about 3 miles west of Selbyville and on land owned by Mr. Curtis Steen, Dagsboro, Delaware. Permission was granted by Mr. Clifford Murray, Selbyville, Delaware, telephone number 436-5579, Mr. Murray leases the Property.

To reach the station from the Post Office in Selbyville, Delaware, go southwest on Church Street for 0.6 mile to the junction with U.S. Highway 113. Turn left and go south on U.S. Highway 113 for 0.3 mile to a paved crossroad, just after crossing the State Line. Turn right and go westerly on the paved road for 1.1 miles to a paved I-road. Turn right and go northerly on the paved road for 1.25 miles to a sharp curve to the left and a field road right and reference mark 3. Turn right and go easterly on the field road for 0.1 mile to a sharp turn to the left. Turn left and go northerly on the field road for 0.1 mile to a I-field road. Turn right and go easterly on the field road for 0.05 mile to a I-ditch and the station on the right.

Station marks are standard disks stamped STEEN 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is 2 inches below the ground surface. It is 6 feet east-southeast of the center of the field road and 6 feet north-northwest of the drainage ditch. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped STEEN NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 12 feet west-northwest of the drainage ditch and in the center of the field road.

Reference mark 2, a standard disk stamped STEEN NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is 1 inch below the ground surface. It is 12 feet west-southwest of the drainage ditch and in the center of the field road.

Reference mark 3, a standard disk stamped STEEN NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that projects 3 inches above the ground surface. It is 26 feet north of the center of the paved road, 15 feet west of the center of the field road and 3 feet south-southwest of a telephone pole. The mark serves as an azimuth mark.

SOURCE: C-15790

GEODETIC LATITUDE	38 27 05.66834	ELEVATION	11.0 METERS
GEODETIC LONGITUDE	75 17 22.01784		36 FEET

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from south)	CODE
DE	0700	536,434.20	164,473.01	323 28 15.2	0700
MD	1900	1,289,853.11	229,737.60	322 23 50	1900

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = (\theta_{MD} - \theta_{DE})$  FORMULA SELECTING THE SECOND TERM

TOTAL STATION OR OBJECT	GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
STEEN RM 3	323 28 15.2	323 23 30	0700
STEEN RM 3	323 28 15.2	322 23 50	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **STEEN**  
ESTABLISHED BY: **J.A.L.**  
RECOVERED BY: **C.J. Novak**  
YEAR: **1974** STATE: **Delaware** BENCH MARK ALSO ☐  
YEAR: **1976** COUNTY: **Sussex**  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: **3 miles west of Selbyville**  
HEIGHT OF TELESCOPE ABOVE STATION MARK: **5 FEET**. HEIGHT OF LIGHT ABOVE STATION MARK: **FEET**.

OBJECT	BEARING	DISTANCE	DIRECTION
RM 3 (AZ MK) (VG)	SE	(0.2 mile)	0 00 00.00
BOUNDARY MONUMENT 13	SSW	11.40	3.476
RM 1	SW	24.86	7.577
RM 2	NNE	23.58	7.190
RM 1 to RM 2 (slope)		47.03	14.335

The station and all marks recovered in good condition as described in 1974 description. A difference of 2 minutes and 22 seconds in direction was noted to reference mark 1. A difference of 1 minute and 52 seconds in direction was noted to reference mark 2. The distances to both marks were within cross agreement with the 1974 observations. The Maryland-Delaware Boundary Monument number 13 was established at this date, see description thereof.



## HORIZONTAL CONTROL DATA

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NAME OF STATION: SLAB  
NEAREST TOWN: Bishopville, Md.  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Del., Md. Line County: Sussex Del., Worcester Md.  
OBSERVATION NO.: 380752  
YEAR: 1974  
DESCRIBED BY: A. G. Thacker

## DESCRIPTION OF TRIANGULATION STATION

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK		HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
	SURFACE-STATION MARK		DISTANCES TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
1b	OBJECT	BEARING	FEET	METERS	DIRECTION	
11b	RM 3 (AZ. Mk. X Electronic Dist.)	NW	373.614	00 00 00.00		
11b	RM 2	NNW	76.16	23.215	33 30 36	
11b	RM 1	ESE	64.36	19.616	189 13 27	
	RM 1 to RM 2		137.40	41.880		

The station is located about 3.4 miles west-southwest of Williams-ville, 1.6 miles east-southeast of Selbyville, 0.6 mile north of Bishopville and on road right-of way and near the Maryland-Delaware state line. To reach the station from the post office in Bishopville, go north-east on paved road for 0.4 mile to a side road on the left. Turn left and go northwest on a paved road for 0.4 mile to the state line and the station on the left. Continue northwest on the paved road for 0.2 mile to reference mark 3 on the left.

Station marks are standard disks stamped SLAB 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 66 feet southeast of a powerline pole with a transformer, 15 feet southwest of the center of the paved road and 4 feet northwest of a Maryland-Delaware state line sign. The underground disk is set in the top of an irregular mass of concrete 42 inches below the ground surface.

Reference mark 1, a standard disk stamped SLAB NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 60 feet southeast of the Maryland-Delaware state line sign, 30 feet northwest of a powerline pole, 14 feet southwest of the center of the paved road and 2 feet northeast of a speed-limit sign.

Reference mark 2, a standard disk stamped SLAB NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 19 feet northeast of the paved road and 4 feet north of a powerline pole.

Reference mark 3, a standard disk stamped SLAB NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 97 feet northwest of a powerline pole with a transformer, 51 feet south-southeast of a 36-inch pine tree, 13 feet southwest of the center of the paved road and 2 feet east of a metal highway sign. The mark serves as an azimuth mark.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SLAB  
STATE: DELAWARE  
SOURCE: G-15790  
YEAR: 1974  
SECOND ORDER

DEODETIC LATITUDE	38 27 04.14521	ELEVATION	8.0 METERS
DEODETIC LONGITUDE	75 11 45.45166		26 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	563,209.70	164,369.48
MD	1900	1,316,625.82	230,098.93
			+ 0 08 14
			+ 1 07 56

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 1014 61 FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	DEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
SLAB RM 3	128 18 48.2	128 10 34	0700
SLAB RM 3	128 18 48.2	127 10 52	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: SLAB  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1974 STATE: Delaware  
YEAR: 1976 COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles east of Selbyville  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE FEET	DIRECTION
RM 3 (AZ. MK.) (VG)	NW	(0.2 mile)	0 00 00:00
BOUNDARY MONUMENT 8	NNW	23.217	33 30 30
RM 1	SE	27.44	187 40 57.8
RM 1 to RM 2 (slope)	ESE	64.35	189 13 42
		137.39	41.876

The station and all marks were recovered and found in good condition as described in the 1974 description. The distance and direction to all marks checked 1974 observations.  
The Maryland-Delaware Boundary Monument number 8 was established at this date. see description thereof.

HORIZONTAL CONTROL DATA

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NAME OF STATION: TOWNSEND  
NEAREST TOWN: Delmar, Delaware  
CHIEF OF PARTY: Lewis A. Lapine  
STATE: Md-Del Line  
COUNTY: Wilcomico-Sussex  
QUADRANGLE NO.: 380753  
YEAR: 1974  
DESCRIBED BY: R. K. Moore

DESCRIPTION OF TRIANGULATION STATION

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 32.74 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 34.89 METERS.  
1b SURFACE STATION MARK. DISTANCES AND DIRECTIONS TO ADJACENT STATION MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION.

OBJECT	BEARING	FEET	METERS	DIRECTION
LINE 1932				0 00 00.00
BOUNDARY MONUMENT 25 (Electronic Distance)	ESE	207.90	63.370	19 50 50.34
BOUNDARY MONUMENT 25 OFFSET (Electronic Distance)	ESE	213.22	64.992	23 15 29.61
11b RM 2	SW	220.45	(67.193)	154 15 24.1
11b ANDREWS RM 3 (Az. Mk.) (Ele. Dis)	W	1087.325	325.179	05 36.5
11b RM 1	E	133.99	(40.840)	352 50 49.3

No measurement between RMs due to heavy traffic.  
The station is located about 5.0 miles northwest of Parsonsburg, Maryland, 3.7 miles east of Delmar, 2.6 miles southwest of Ward, Delaware and on land owned by Mr. Preston Townsend, Millsbury, Delaware.  
To reach the station from the junction of U.S. Highway 13 and State Road 54 at the east edge of Delmar, go east on State Road 54 for 1.8 miles to a paved side road right and reference mark 3 on the right, continue east on State Road 54 for 0.5 mile to a paved side road left and the station in the northwest angle of the paved road and State Road 54.  
Station marks are standard disks stamped TOWNSEND 1974. The surface disk is set in the top of a 12-inch cylindrical concrete monument that is 18 inches below the ground surface. It is 88 feet west of the center of the paved road, 53 feet north of the centerline of State Road 54, 31 feet northeast of telephone pole number 623-85 and 29 feet west-northwest of a telephone pole. The underground disk is set in the top of an irregular mass of concrete 40 inches below the ground surface.  
Reference mark 1, a standard disk stamped TOWNSEND NO 1 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 70 feet north of the centerline of State Road 54, 23 feet east-southeast of the center of the paved road and 4 feet southwest of powerline pole number 20.  
Reference mark 2, a standard disk stamped TOWNSEND NO 2 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 43 feet south-southwest of the centerline of State Road 54, 23 feet east of the center of RUM RIDGE Road and 2 feet north-northeast of RUM RIDGE ROAD sign.  
Reference mark 3, a standard disk stamped ANDREWS NO 3 1974, is set in the top of a 12-inch cylindrical concrete monument that is flush with the ground surface. It is 53 feet east of the center of Nelson Road, 27 feet south of the centerline of State Road 54, 8 feet northwest of powerline pole number 488-10 and 4 feet east-southeast of NELSON ROAD sign.  
The mark serves as an azimuth mark.  
BOUNDARY MONUMENT 25, is an iron pin set in an irregular mass of concrete 18 inches below the ground surface. It is 13.8 feet north of the old Boundary Monument, which was offset when the Highway was under construction and 9 feet south of the centerline of State Road 54.  
BOUNDARY MONUMENT 25 OFFSET, a 6 by 10 inch granite monument that projects 2 feet above the ground surface. It is 22.8 feet south of the centerline of State Road 54 and 13.8 feet south of Boundary Monument 25.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TOWNSEND  
STATE: DELAWARE  
YEAR: 1974  
SECOND ORDER

SOURCE: G-15790

GEODETIC LATITUDE	38 27 15.75519	ELEVATION	16.2 METERS
GEODETIC LONGITUDE	75 30 37.54718		53 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# OF Δ	ANGLE
DE	0700	473,147.89	165,481.92	-	0 03 30
MD	1900	1,226,559.99	229,648.65	+	0 56 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF Δ. FORMULA INFLECTING THE SECOND TERM.

TO STATION ON OBJECT	GEODETIC AZIMUTH (From North)	PLANE AZIMUTH (From North)	CODE
ANDREWS RM 3	90 36 15.8	90 39 46	0700
ANDREWS RM 3	90 36 15.8	89 40 10	1900

THESE DATA OBTAINED FROM ADJUSTMENT OF 1976.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TOWNSEND  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1974  
STATE: Delaware  
COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 1/2 miles east of Delmar

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

The station and all marks were recovered and found in good condition as previously described.

R





Courtesy of: William J. Hingst

*Boundary Monument MIDDLE POINT, set by Mason and Dixon in 1768, is at the junction of the east-west and north-south Delaware-Maryland boundaries. Penn coat of arms is engraved on north and east sides, Calvert coat of arms on south and west sides. A smaller stone, located 32 in. north of the Middle Point monument, was set in 1760 (Bayliff 1959).*



## Part Two

### North - South Boundary



(A)



(B)

*Boundary Monument No. 5 of the north-south boundary, set by Mason and Dixon in the latter part of 1765. This crown stone is similar to others set at intervals of 5 miles along the north-south boundary. (A) East (Delaware) side of boundary monument shows the Penn coat of arms. (B) West (Maryland) side shows the Calvert coat of arms.*

Courtesy of: Ralph Poust

Courtesy of: Ralph Poust



(A)



(B)

*Boundary Monument No. 82, identified as the TANGENT stone, of the north-south boundary. The smaller stone was set by Mason and Dixon on June 18, 1765 and the stone engraved with M and D was set by Graham in 1849. (A) West (Maryland) side of TANGENT stone. (B) East (Delaware) side of TANGENT stone.*



## PART TWO

### NORTH-SOUTH BOUNDARY

#### Definition of the Boundary

The north-south boundary (fig. 1) between the States of Delaware and Maryland, extending from the western terminal of the Transpeninsular Line (the east-west boundary) to the northeast corner of Maryland, is defined in three parts (Bayliff 1959) as follows:

1. The Tangent Line—This line begins at MIDDLE POINT on the east-west boundary and extends northward to a point where the line is tangent to a circle of 12-mile radius centered at the New Castle courthouse.

2. The Arc—This part of the boundary is the arc of the New Castle circle that lies to the west of a line drawn due north from the Tangent Point.

3. The North Line—This line extends due north from the New Castle circle to the northeast corner of Maryland. The northeast corner of Maryland is defined as the intersection of the due north line from the New Castle circle with a parallel of latitude 15 miles south of the southernmost limits of Philadelphia.

#### Colonial Survey of the Tangent Line, 1761-63

In accordance with the boundary agreement of 1760 between Lord Baltimore and the Penn heirs, surveyors of the provinces of Maryland and Pennsylvania made observations for the true meridian at MIDDLE POINT and started a survey of the Tangent Line in 1761. This line was extended over a distance of 80 miles north from MIDDLE POINT. Then, the circle of 12-mile radius around New Castle was laid out, and it was found that the line north from MIDDLE POINT intersected the radius of the 12-mile circle at a distance of 7 miles and 39.97 chains\* from New Castle courthouse. At the time of this survey, the point of tangency of the line northward from MIDDLE POINT with the circle around New Castle was determined and marked by the colonial surveyors (Bayliff 1959).

A second attempt was made by the colonial surveyors in 1762 to lay out the Tangent Line. In this survey, the Tangent Line cut the New Castle radius at a point about 0.5 mile east of the Tangent Point that was fixed at 12 miles from New Castle the previous year. Then in August 1763, a third measurement of the line was completed; this line was 5.25 chains west of the Tangent

Point. Results of the third survey were reported to commissioners of the two provinces, and after offsets had been made to the true Tangent Line, they were ready to accept this survey as defining the boundary. The commissioners, however, were informed that Charles Mason and Jeremiah Dixon had been engaged by the Penns and Lord Baltimore to assist in running the boundaries between the two provinces.

#### Mason-Dixon Survey of the North-South Boundary

Charles Mason and Jeremiah Dixon, the two English mathematician astronomers engaged to assist in completing surveys of the Maryland-Pennsylvania boundary, arrived in Philadelphia on November 15, 1763. About 2 weeks later, the commissioners from Maryland and Pennsylvania met with Mason and Dixon to outline the survey operations to be accomplished. These operations are best described in a letter to Thomas Penn (Cummings 1962):

Sir

*We arrived here the 15th of November and immediately wrote to Governor Sharp signifying our arrival. On the 30th of November the Commissioners from Maryland came to this city and, they in conjunction with those of Pensylvania, have given us instructions to the following purpose.*

*1st—To settle the latitude of the southernmost point of the City of Philadelphia by the Sector, (which we are now about).*

*2nd—To find a point by the Sector, 30 or 35 miles west from this place, having the same latitude as the southernmost point of this city.*

*3rd—From this point so found to measure 15 miles horizontally due south, which done, to observe the latitude of the south end of the said Line p Sector, and so proceed to run the parallel of latitude through this last point which is to be the north boundary of Maryland and south boundary of Pensylvania.*

*4th—On the 15th of June next, (if we receive no further orders from the Commissioners), we are to begin the Tangent, as those already run for Tangent are so very irregular differing from each other in the middle about 200 feet.*

*5th—When we judge we are within 10 days of finishing the said Tangent, we are to inform the Commissioners that they may meet us at Tangent Point or thereabout. As our instruments are in*

\* The chains used were 66 ft in length with 100 links per chain. In the original boundary surveys, distances were recorded as chains and links; in this report, however, the distances are given as chains and decimals of a chain.



*very good order, and not in the least damaged by the voyage, we hope by the end of next summer, to give a satisfactory acct. of all the above work mentioned in our instructions.*

*We are*

*Sir*

*Your most obedient and  
humble servants*

*Charles Mason  
Jeremiah Dixon*

In the letter to Thomas Penn, instructions numbered 1, 2, and that part of 3 that established the parallel of latitude of the Maryland-Pennsylvania boundary were completed by June 12, 1764. The Mason-Dixon Journal (American Philosophical Society 1969) of June 13 states:

*Packing up the instruments and preparing to set out for the middle point of the Peninsula formed by the Sea and Chesapeake Bay in order to run the Tangent Line.*

Measurements along the Tangent Line were started by Mason and Dixon on June 26, 1764, and by August 25 the line had been extended over a distance of 81 miles. The journal of August 25 and 27 states:

*Set the 81st mile post and produced the line till we judged we were past the point settled before to be the Tangent Point in the circle round New Castle of 12 miles radius. Opened a vисто and produced the line run (by the former surveyors) from New Castle courthouse till it intercepted the line we ran. The distance from this point of intersection and the point esteemed to be the Tangent Point in the New Castle circle is 22.51 chains. The distance from the MIDDLE POINT to the said point of intersection is 81 miles and 78.31 chains.*

It is surprising, indeed, that Mason and Dixon reached the north end of the Tangent Line at a distance of 22.51 chains west of Tangent Point; whereas, the third attempt by the colonial surveyors was only 5.25 chains to the west of TANGENT. Tabulations are given in the Mason-Dixon Journal for offset computations at 5-mile intervals for their line and for that of the colonial surveyors. Along with these tabulations is another table of offsets with the heading, "From the above our offsets will be to the east of the offsets made by the third or last line." As explained later in the journal, this table of offsets was used for setting preliminary posts at 5-mile intervals along the Tangent Line. Therefore, the offsets used for marking these points were based on combined results of the colonial and Mason-Dixon surveys of the Tangent Line. In the table of offsets, which was used to mark the 5-mile points, the reference to the third or last line is obviously the colonial surveyors line, since, as stated in the Mason-Dixon Journal, dated November 12, 1764:

*From the foregoing our second or last line falling two feet two inches to the west of the Middle Point,*

*and sixteen feet nine inches to the east of the point esteemed or shown us to be the Tangent Point....*

As stated in the journal dated September 4, 1764:

*We set out on our return toward the Middle Point to make our offsets at every 5th mile post as per table marked.*

[This table is shown on page 62 of the reference (American Philosophical Society 1969).]

They reached the Middle Point on September 25 and found that they were 2 ft and 2 in. to the west. Then on September 27, Mason and Dixon started the second running of the line from Middle Point to Tangent. On this running of the line, they were a few feet to the east of the offsets, established in accordance with their computed values, at each 5-mile interval. They reached the Tangent Point on November 12, 1764, and found that they were 16 ft 9 in. to the east. Final offsets were then made to mark the Tangent Line at 1-mile intervals.

After completing the Tangent Line survey, Mason and Dixon were engaged in other operations for about 6 months before continuing the north-south boundary survey. During this time, they extended the Maryland-Pennsylvania boundary along the parallel of latitude previously established, over a distance of about 30 miles.

On June 1, 1765, Mason and Dixon returned to the Tangent Point and started observations to establish a meridian that would be a chord of the 12-mile circle and continue north to intersect the Maryland-Pennsylvania boundary parallel. As reported in the journal:

*The distance in the circle of due north course from the Tangent Point is 1 mile and 36.10 chains.*

Offsets from the chord to the arc were computed at intervals of 10 chains; then four points were established on the arc to mark the boundary. Also, a boundary post was set at the intersection of the circle with the meridian north of Tangent Point. It is of interest to note that the maximum distance from the chord to the arc was 116 ft.

The north-south boundary survey was completed on June 6, 1765, and as stated in the journal for this date:

*...continued the line to the parallel of latitude 15 miles south of the southernmost point of the city of Philadelphia. From the Tangent Point to the said parallel on a due north course is 5 miles and 1.50 chains horizontal measure. (On December 10th and 11th, 1766, Messrs. Darby and Cope remeasured this line and found it 5 miles and 2.43 chains). The meridian from the Tangent Point crossed the parallel at 2 miles and 79.27 chains from the point where we began to run the parallel.*

All stones set by Mason and Dixon to mark the north-south boundary were set in the presence of a commissioner from each province (Cummings 1962). Seven stones were set on June 18, 1765: one at the Tangent Point; four in the periphery of the circle around New Castle; one between the intersection of the circle with the North Line and the intersection of the North Line

and parallel; and one at the intersection of the North Line with the Maryland-Pennsylvania boundary parallel. The latter stone is marked the NE CORNER OF MARYLAND.

During the period from December 17, 1765, to January 1, 1766, 50 stones were set at 1-mile intervals marking the boundary along the first 50 miles north of MIDDLE POINT. Then from October 30 to November 20, 1766, 35 stones were set that completed the marking of the north-south boundary (American Philosophical Society 1969). These 85 stones, each 34 in. long, 12 in. wide, and 11 in. thick, were cut and carved on the Isle of Portland, Dorsetshire, England. The stones that mark each fifth mile of the boundary have shields from the Coats of Arms of the Penns on one side and the Calverts on the opposite side. The mile stones between the 5-mile markers are carved with M and P on opposite sides (Cummings 1962).

### **Graham Resurvey of the Arc and North Line in 1849-50**

The boundary stone set by Mason and Dixon in 1765 at the northeast corner of Maryland disappeared at some unknown date prior to 1849 (Bayliff 1959). The absence of this stone and the possibility that some other stones in the general area might have been moved led to the appointment in 1849 of a Joint Commission composed of representatives from the States of Delaware, Maryland, and Pennsylvania.

This Joint Commission obtained from the War Department the detail of Lieut. Col. J. D. Graham to perform surveys necessary to replace any missing boundary monuments and to verify the position of all stones along the boundary from the northeast corner of Maryland to Tangent Point.

In accordance with the proposed survey, Graham re-established the NE CORNER OF MD and marked the corner with a large granite post. The corner was established by producing to an intersection the north-south and east-west boundary lines as marked by monuments then in existence. Also, Graham set new granite posts at the Tangent Point, at the middle point of the Arc north of Tangent Point, and at the point where the Arc cuts the meridian line. All other monuments set by Mason and Dixon between the Tangent Point and the NE CORNER OF MD were reported to be in place on the boundary.

### **Resurvey by The U.S. Coast and Geodetic Survey in 1961-62**

As mentioned in the introduction of this report, the Coast and Geodetic Survey performed a resurvey of the Delaware-Maryland north-south boundary during the period from August 31, 1961, to March 31, 1962. Instructions for the survey stated that observations would be made in accordance with specifications for second-order, class I area triangulation, class II triangulation, and second-order traverse.

The primary objective of the new survey was to establish horizontal control stations at intervals of approximately 1 mile and in the vicinity of each original boundary monument set by Mason and Dixon. These horizontal control stations would then serve as a reference for connecting the existing boundary monuments to the national net and establishing points on the boundary to replace any missing monuments.

In this resurvey, from MIDDLE POINT to the NE CORNER OF MD, a total of 109 new horizontal control stations were established, 28 old stations were recovered, and traverse connections were made to each existing boundary monument from the new station nearby. A Model 4 Geodimeter and a Tellurometer were used to measure approximately 140 lines in the network. A total of 101 lines ranging in length from 1100 m to 20,000 m were measured with the Tellurometer and 40 lines ranging from 310 m to 3000 m were measured with the Geodimeter. Most of the lines measured with the Geodimeter were also measured with the Tellurometer.

The Coast and Geodetic Survey project report of the field operations states:

*The boundary line was heavily timbered with farm land under cultivation on each side of the line. Extra tall towers were required on the project due to the tall timber. Working conditions along the line were difficult due to the low marsh area in many places and extra time was required, with 4-wheel drive vehicles, to haul the steel towers to the station sites. Some stations had to be skipped until the fall farm harvest was completed and then return later to complete the stations. Also, some stations were skipped to allow low areas to drain after the severe east coast storm in the latter part of 1961.*

After the survey was completed, all observational data were submitted to the Washington, D.C., office of the Coast and Geodetic Survey. The observations were then reviewed and checked, and a least-squares adjustment was performed. In this adjustment, all stations that had been positioned in previous surveys were used as control; and all observed directions and distance measures in the resurvey were used as observation equations. Results obtained from the adjustment indicated that all points in the survey were determined well within the specified accuracy. Figure 7 shows all new points established and old points recovered in the resurvey. Figure 8 depicts the boundary monuments along the boundary with relation to roads throughout the area. Numbers indicating the arc stones are not shown; however, these are between Monuments 82 and 84 on figure 8. Monument Number 1, just north of MIDDLE POINT, is shown on figure 6, part I (east-west boundary).

From positions determined in the 1961-62 survey, azimuths and distances were computed from each existing boundary monument to the terminal points of the Tangent Line, MIDDLE POINT, and TANGENT. The offsets were plotted and a smooth curve through the points indicated a maximum displacement of about 18 ft from the theoretical line. The maximum displace-

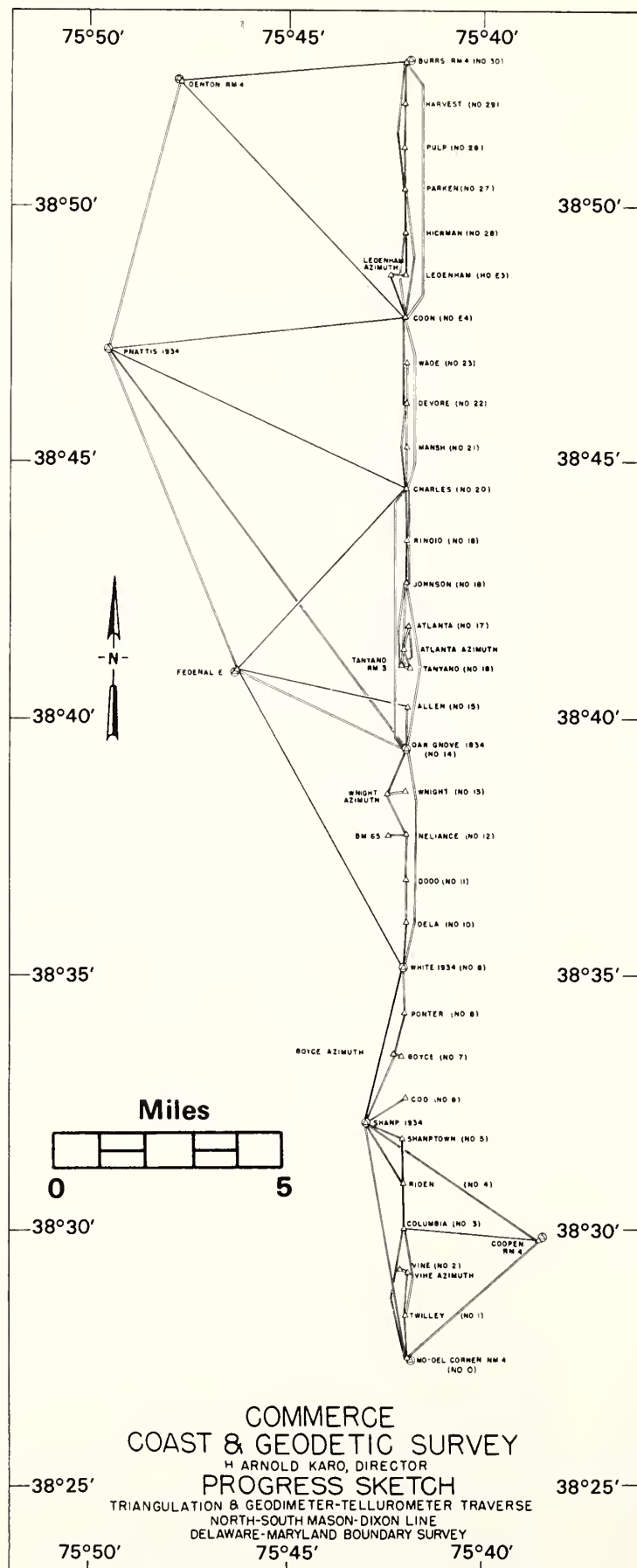


FIGURE 7.—Section 1 of north-south boundary survey of 1961-62.



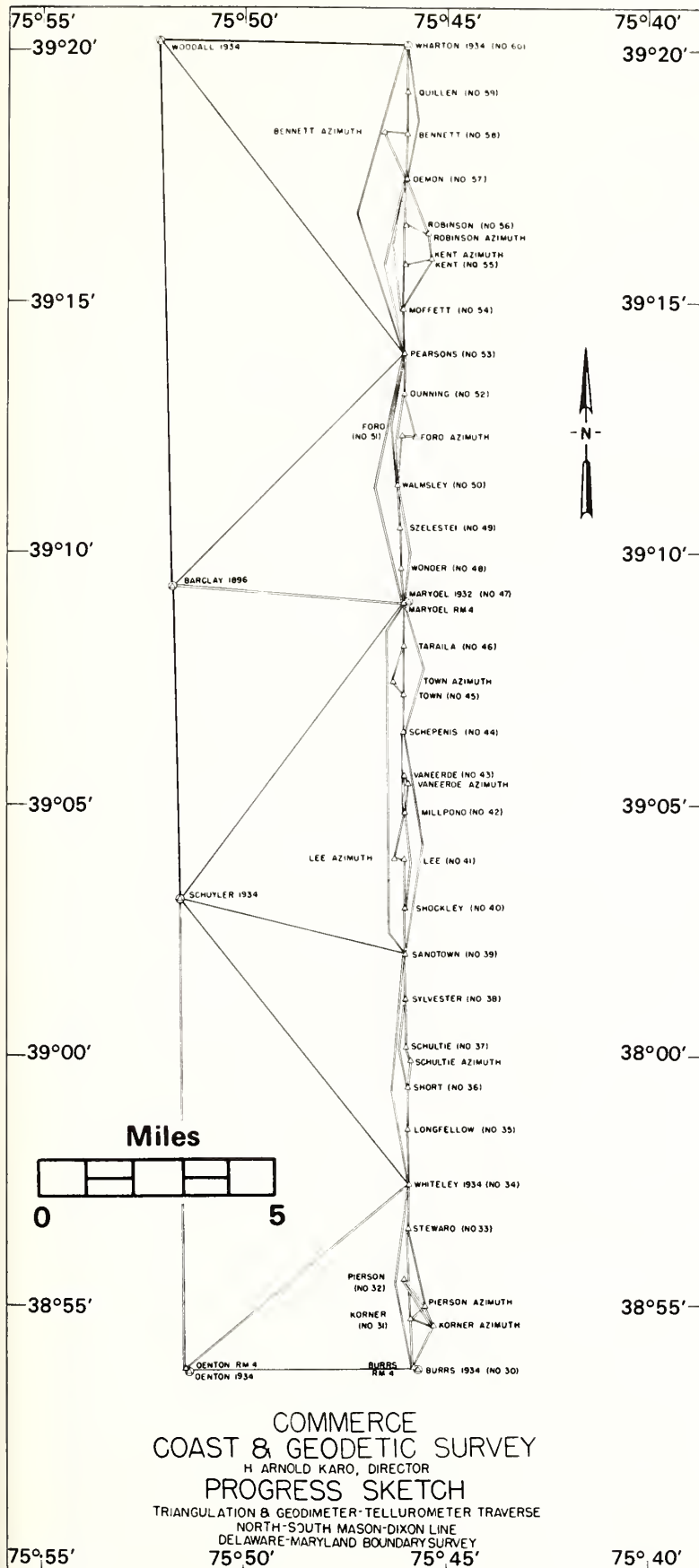


FIGURE 7—Section 2.

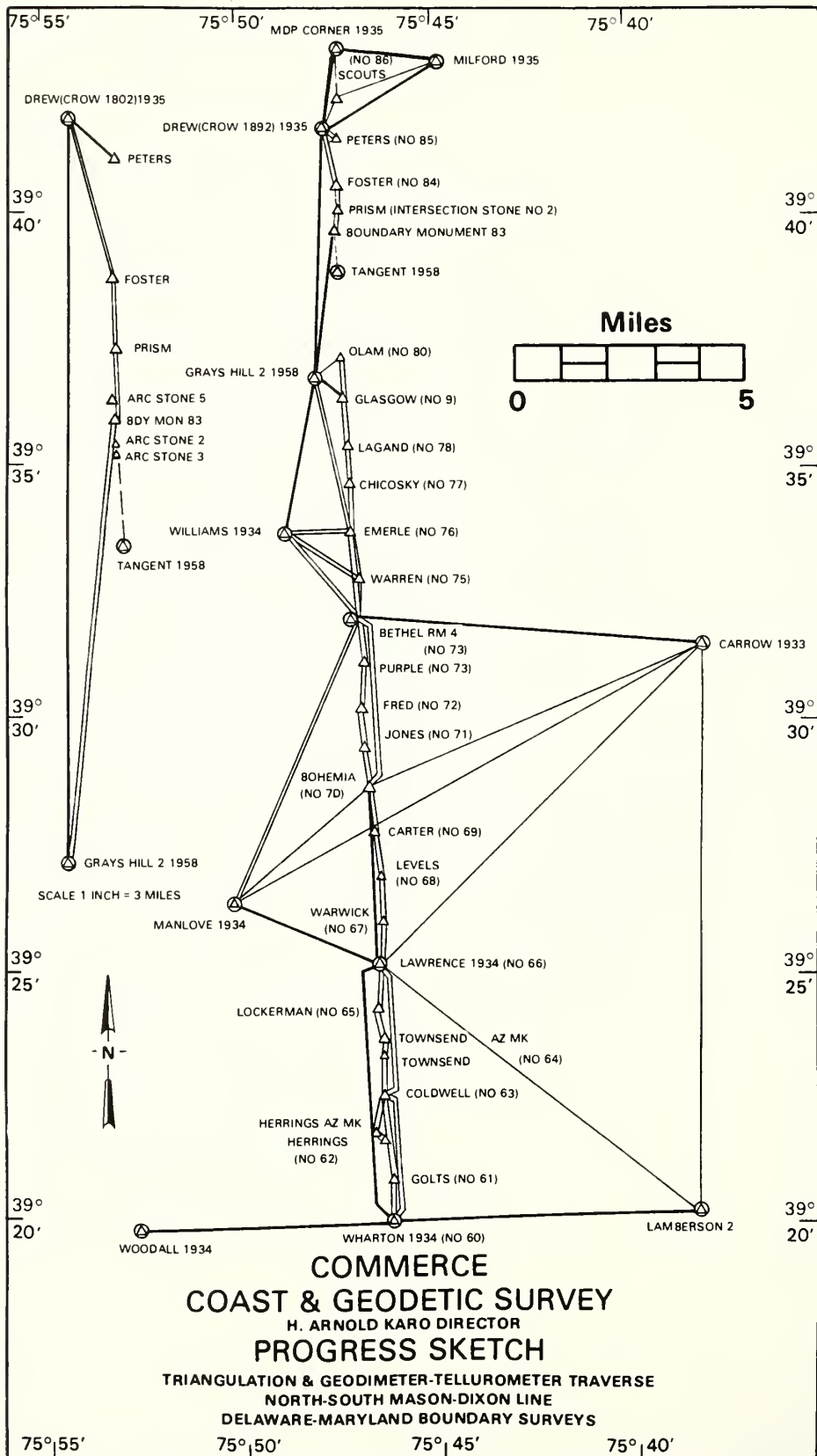


FIGURE 7—Section 3.

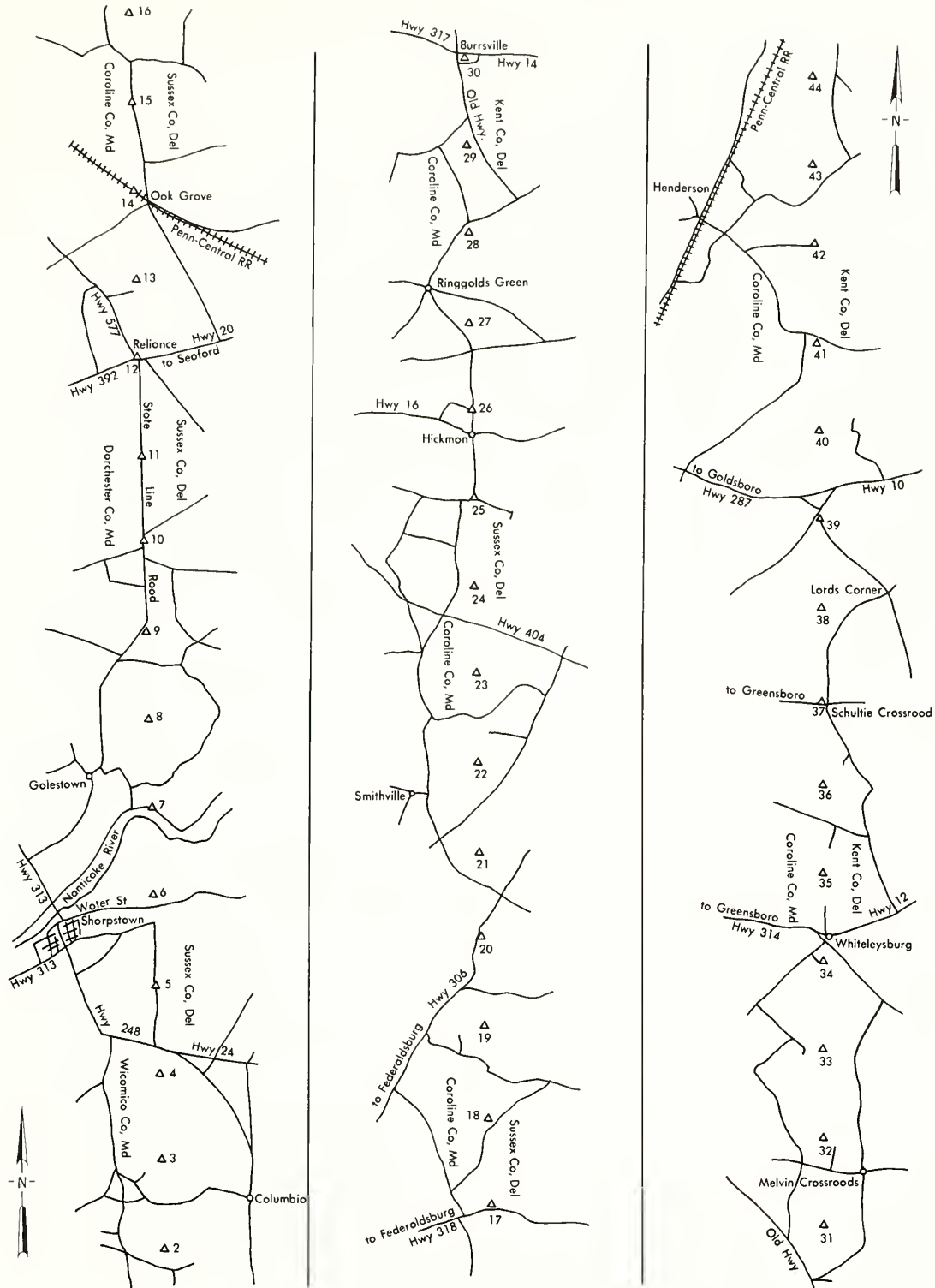


FIGURE 8.—Markers along north-south boundary, Middle Point to NE Corner Maryland.





## Part Two: North-South Boundary

ment occurs near the middle of the line at about Monument Number 44. Of the 83 monuments established on this line by Mason and Dixon, 15 were missing and 5 appeared to be out of position. It was arbitrarily decided that all monuments that were 4 ft or more from the mean curve had been displaced. Figure 9 shows the mean curve as determined from the offsets, the 5 monuments more than 4 ft from the curve, and the 15 missing monuments (Meade 1964).

Arc Stones 2, 3, 4, and 5 were located in the 1961-62 survey, and Arc Stone 1 was located in a survey of 1958. Computations were then made to find the center of a circle passing through TANGENT and Intersection Stone 2 (set by Graham in 1849). The position of the center was determined, and distances were computed to each of the five arc stones. These distances were all within 4 ft of the computed radius of the circle.

On the North Line, the three monuments set by Mason and Dixon between the Intersection Stone 2 and the NE CORNER OF MD (set by Graham in 1849) were found to be within 2 ft of the meridian line between the terminals.

At a conference held on September 4, 1962, in the office of the Coast and Geodetic Survey, Washington, D.C., with officials of the States of Delaware and Maryland, the following recommendations were made by the C&GS:

1. That the five monuments which were 4 or more feet from the mean curve be replaced on line with existing monuments to the north and south.
2. That the 15 missing monuments be reestablished on line between the nearest existing monument to the north and to the south in each case.
3. That the remaining monuments be accepted as properly marking the boundary.

Also, at this conference the C&GS pointed out to the State officials that theoretical computations necessary to replace the 15 missing monuments and the 5 monuments suspected as being out of position would be made by the C&GS.

A few months after the C&GS recommendations were presented to the two States, horizontal control data for all points along the north-south boundary were furnished to officials of each State; but no action was taken to carry out the recommendations until a request was made by the Civic Club of Maryland, Delaware, to replace Monument Number 45 on the boundary. This was one of the five monuments determined to be more than 4 ft from the mean curve between MIDDLE POINT and TANGENT. When the request to replace Monument 45, dated December 28, 1967, was received in the C&GS office, it was referred to the officials of Delaware and Maryland for approval. Then, following approval by officials of the two States, Boundary Stone Number 45 was moved about 5 ft to the west and reset on the boundary in May 1968.

Five years later when officials of Delaware and Maryland agreed that a resurvey of the east-west boundary should be made, it was also agreed that final action would be taken to restore the north-south boundary as recommended by the Coast and Geodetic Survey in 1962.

During the period from January 20 to February 20, 1975, a reconnaissance survey of the north-south boundary was performed to locate points on the boundary for moving the four monuments reported to be more than 4 ft off the boundary and for setting markers to replace the 15 missing stones. The boundary sites for resetting existing monuments or setting new markers were selected by representatives from the States of Delaware and Maryland and from the National Geodetic Survey. Measurements were then made from the nearby triangulation or traverse station at each site. These measurements, along with descriptive information for each site, were submitted to officials of each State in a report titled "Boundary Summary" dated April 10, 1975. The boundary sites as described were selected in accordance with the recommendations made by the C&GS in 1962, and these were approved by officials of Delaware and Maryland at a meeting held in Dover, Del., on May 7, 1975.

As a result of the Dover meeting, officials of the State of Delaware and the State of Maryland signed a joint agreement that gives detailed information on remarking the north-south boundary between the States. A copy of the joint agreement is given as appendix C of this report. The boundary summary mentioned in the joint agreement is not attached to the agreement in appendix C since all information in the summary is given in this report in the station descriptions of the horizontal control data for each boundary point.

The project for resetting stones on the boundary and for establishing new markers was started in 1976 and was completed in the early part of 1977. Final measurements, made from the nearby triangulation or traverse station to the reset boundary stones and/or new markers, were used to compute positions of each boundary point.

Azimuths given in table 4, computed from the final positions published by the National Geodetic Survey, verify the alignment of stones reset or new markers established along the boundary between the original monuments. Azimuths and distances between consecutive monuments along the total length of the boundary are given in table 5. The traverse and/or triangulation stations from which the boundary markers were established are shown in table 6. In the Mason-Dixon survey of the north-south boundary from MIDDLE POINT to the NE CORNER OF MD, 83 monuments were set on the section of the boundary from MIDDLE POINT to TANGENT; 4 monuments were set along the arc of the New Castle circle; and 5 monuments were set on the section from the circle to the NE CORNER OF MD. From the comments given in table 6, the 92 boundary monuments set by Mason and Dixon can be accounted for as follows: 66 original monuments were found to be in position on the boundary; 18 original monuments were recovered and reset on the boundary; 2 monuments, INTERSECTION STONE 2 and the NE CORNER OF MD, were destroyed in the early 1800's, and stones to replace the original monuments were set by Graham in 1849; the remaining 6 original monuments were not found, and disks were set on the boundary at 7, 10, 11, 30, 61, and 64 miles from MIDDLE POINT.

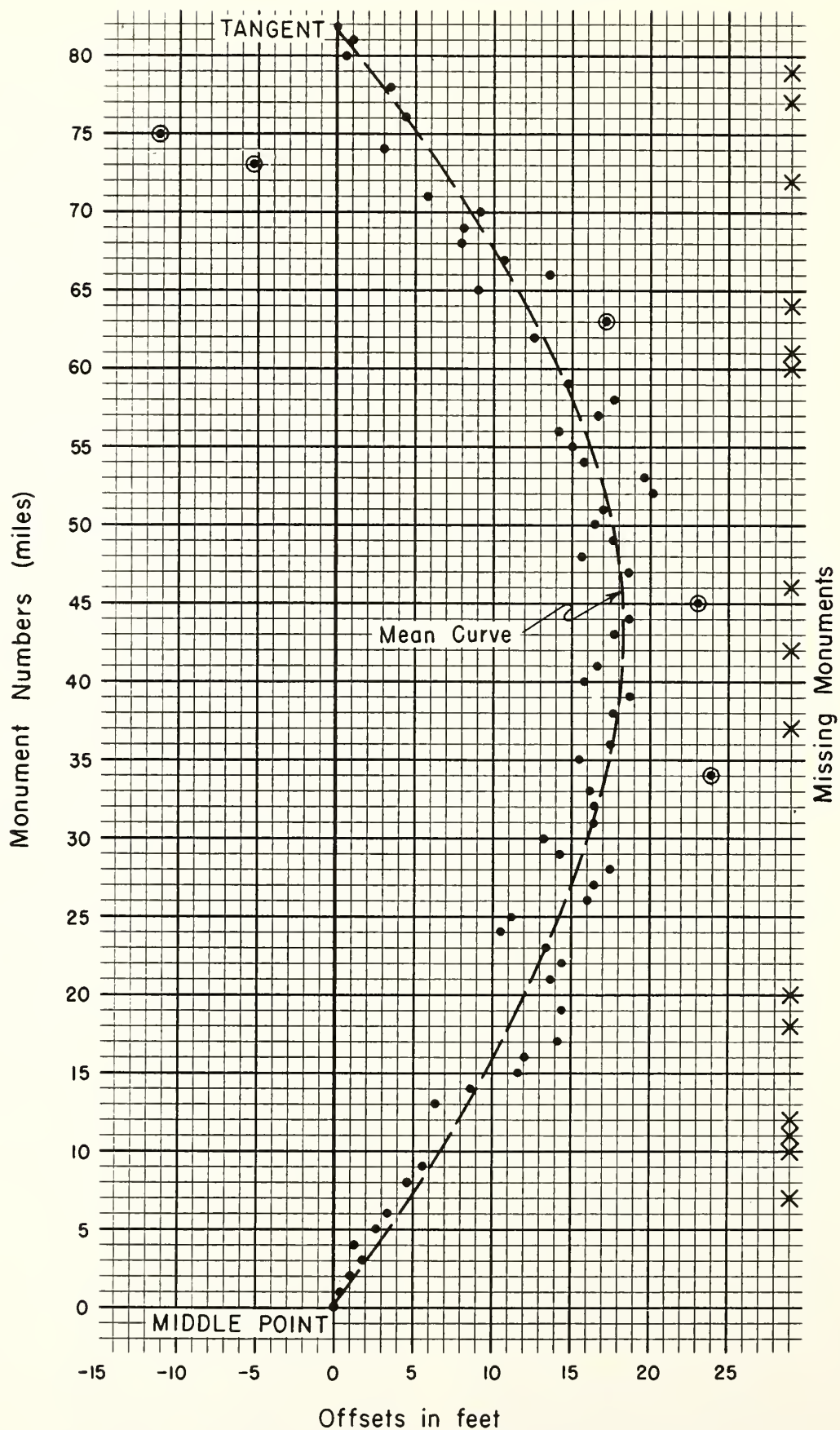


FIGURE 9.—Mean curve of Tangent Line as determined from survey of 1961-62.



**TABLE 4.—Azimuths to verify setting of new markers and resetting old monuments on the north-south boundary between the original monuments**

Monument Number		Azimuth (from south)		
From	To			
6 <sup>1</sup>	8 <sup>1</sup>	176°	28′	11.8″
	7	176	28	11.9
9 <sup>1</sup>	13 <sup>1</sup>	176	27	48.2
	10	176	27	48.7
	11	176	27	48.0
	12	176	27	48.3
17 <sup>1</sup>	19 <sup>1</sup>	176	27	25.1
	18	176	27	24.9
19 <sup>1</sup>	21 <sup>1</sup>	176	27	03.8
	20	176	27	03.7
33 <sup>1</sup>	35 <sup>1</sup>	176	26	29.2
	34	176	26	29.4
36 <sup>1</sup>	38 <sup>1</sup>	176	26	40.6
	37	176	26	39.6
41 <sup>1</sup>	43 <sup>1</sup>	176	26	40.2
	42	176	26	40.2
44 <sup>1</sup>	47 <sup>1</sup>	176	26	08.9
	45	176	25	48.3
	46	176	26	09.0
59 <sup>1</sup>	62 <sup>1</sup>	176	25	03.3
	60	176	25	02.8
	61	176	25	03.3
62 <sup>1</sup>	65 <sup>1</sup>	176	24	33.2
	63	176	24	32.3
	64	176	24	36.6
71 <sup>1</sup>	74 <sup>1</sup>	176	24	23.1
	72	176	24	23.4
	73	176	24	22.8
74 <sup>1</sup>	76 <sup>1</sup>	176	25	12.0
	75	176	25	11.5
76 <sup>1</sup>	78 <sup>1</sup>	176	24	27.8
	77	176	24	27.8
78 <sup>1</sup>	80 <sup>1</sup>	176	23	48.4
	79	176	23	47.9

<sup>1</sup> Original boundary monument.

**TABLE 5.—Azimuth and distance between monuments along the north-south boundary.  
(AS is Arc Stone, and IS Intersection Stone)**

Monument Number		Azimuth (from south)			Distance (meters)
From	To				
0	1	176°	28′	15.0″	1612.643
1	2	176	28	28.1	1613.413
2	3	176	28	32.1	1612.389
3	4	176	27	32.4	1611.963
4	5	176	28	47.3	1611.308
5	6	176	28	17.5	1613.627
6	7	176	28	11.9	1606.431
7	8	176	28	06.9	1616.092
8	9	176	28	26.2	1609.858
9	10	176	27	48.7	1663.124
10	11	176	27	44.6	1557.703
11	12	176	27	43.7	1778.044
12	13	176	27	39.8	1451.761
13	14	176	29	01.1	1611.524
14	15	176	29	19.6	1610.875
15	16	176	27	45.8	1612.273
16	17	176	28	45.5	1612.788
17	18	176	27	24.9	1518.298
18	19	176	27	22.8	1708.104
19	20	176	27	03.7	1642.439
20	21	176	27	01.2	1582.915
21	22	176	27	31.4	1610.596
22	23	176	26	27.6	1626.711
23	24	176	25	17.0	1605.923
24	25	176	27	30.1	1613.719
25	26	176	30	03.0	1617.788
26	27	176	27	13.9	1605.313
27	28	176	27	32.2	1612.684
28	29	176	24	50.3	1617.672
29	30	176	26	12.1	1620.282
30	31	176	28	49.6	1610.921
31	32	176	26	44.0	1616.367
32	33	176	26	28.6	1611.533
33	34	176	26	29.4	1610.591
34	35	176	26	26.4	1615.003
35	36	176	27	40.3	1625.073
36	37	176	26	39.6	1466.049
37	38	176	26	38.9	1758.019
38	39	176	26	57.3	1615.659
39	40	176	24	36.5	1601.794
40	41	176	26	47.2	1619.960
41	42	176	26	40.2	1827.153
42	43	176	26	37.3	1428.147
43	44	176	26	47.6	1612.619
44	45	176	25	48.3	1573.980
45	46	176	26	26.3	1632.114
46	47	176	26	03.6	1618.931
47	48	176	24	09.2	1613.800
48	49	176	27	17.6	1610.589
49	50	176	25	06.6	1604.928

**TABLE 5.—Azimuth and distance between monuments along the north-south boundary.—Continued**  
(AS is Arc Stone, and IS Intersection Stone)

Monument Number		Azimuth		Distance	
From	To	(from south)		(meters)	
50	51	176°	26'	23.8''	1614.330
51	52	176	27	50.8	1609.451
52	53	176	25	25.8	1622.907
53	54	176	23	17.5	1609.722
54	55	176	25	10.6	1606.392
55	56	176	25	16.4	1618.579
56	57	176	27	12.5	1612.092
57	58	176	26	16.3	1618.704
58	59	176	23	41.6	1617.418
59	60	176	25	02.9	1690.011
60	61	176	25	01.0	1523.391
61	62	176	24	57.9	1622.405
62	63	176	24	32.3	1612.549
63	64	176	24	38.9	1408.309
64	65	176	24	22.6	1812.870
65	66	176	28	02.4	1615.959
66	67	176	23	29.9	1614.691
67	68	176	23	15.6	1618.457
68	69	176	25	22.1	1611.953
69	70	176	25	38.8	1615.606
70	71	176	22	51.8	1614.037
71	72	176	24	23.4	1880.183
72	73	176	24	18.8	1331.564
73	74	176	24	18.2	1626.689
74	75	176	25	11.5	1416.844
75	76	176	25	10.0	1806.702
76	77	176	24	27.8	1709.357
77	78	176	24	25.0	1515.215
78	79	176	23	47.9	1674.278
79	80	176	23	46.1	1563.270
80	81	176	24	48.2	1616.521
81	82	176	23	48.6	1568.329
82	AS 1	177	27	40.6	563.856
AS 1	AS 2	179	01	42.4	605.212
AS 2	AS 3	176	01	57.6	12.437
AS 3	AS 4	180	47	52.6	387.661
AS 4	AS 5	181	21	49.1	221.890
AS 5	IS 2	182	34	44.7	568.780
IS 2	84	180	01	13.4	884.264
84	85	180	01	21.2	1610.675
85	86	179	59	05.3	1611.643
86	87	180	00	11.7	1644.814

**TABLE 6.—Boundary monuments and traverse or triangulation stations from which the monuments were positioned or established.**  
(AS is Arc Stone, IS Intersection Stone.)

Monument Number	Traverse or triangulation station with comments on boundary monument
0 <sup>1</sup>	MD DEL CORNER RM 4 1962 [Triangulation station disk MD DEL CORNER 1932 is set in top of boundary monument. According to Bayliff (1959), this monument was set by Mason and Dixon in 1768. See Monument No. 35 on east-west boundary.]
1 <sup>1</sup>	TWILLEY 1962
2	VINE 1962 (Original monument recovered and reset in 1962.)
3 <sup>1</sup>	COLUMBIA 1962
4 <sup>1</sup>	RIDER 1962
5 <sup>1</sup>	SHARPTOWN 1962
6 <sup>1</sup>	COD 1962
7	BOYCE 1962 (Boundary disk set in 1976.)
8 <sup>1</sup>	PORTER 1962
9 <sup>1</sup>	WHITE 1962
10	DELA 1962 (Boundary disk set in 1976 in center of State Line Road under manhole cover.)
11	DODD 1962 (Boundary disk set in 1976 in center of State Line Road under manhole cover.)
12	RELANCE 1962 (Original monument found 3 ft below the surface of State Line Road and reset on boundary in 1976, 134 m to the north.)
13 <sup>1</sup>	WRIGHT 1962
14 <sup>1</sup>	OAK CROVE 1934 (Triangulation disk OAK GROVE set in top of monument in 1934.)
15 <sup>1</sup>	ALLEN 1962
16 <sup>1</sup>	TANYARD 1962
17 <sup>1</sup>	ATLANTA 1962
18	JOHNSON 1962 (Original monument recovered and reset on boundary in 1976.)
19 <sup>1</sup>	KINDIG 1962
20	CHARLES 1962 (Original monument recovered and reset on boundary in 1976.)
21 <sup>1</sup>	MARSH 1962
22 <sup>1</sup>	DEVORE 1962
23 <sup>1</sup>	WADE 1962
24 <sup>1</sup>	COON 1962
25	LEDENHAM 1962 (Results of the 1961-62 survey showed this monument to be in its original position as set by Mason and Dixon. Measurements made in 1977 show the monument was moved 1.279 m to the north when an underground telephone cable was laid.)
26 <sup>1</sup>	HICKMAN 1962
27 <sup>1</sup>	PARKER 1962
28 <sup>1</sup>	PULP 1961
29 <sup>1</sup>	HARVEST 1962
30	BURRS 1934 (Original monument was replaced by triangulation station BURRS in 1934. The boundary stone was not found in 1961.)
31 <sup>1</sup>	KORNER 1962
32 <sup>1</sup>	PIERSON 1962
33 <sup>1</sup>	STEWART 1962
34	WHITELEY 1934 (Triangulation station disk WHITELEY was set in top of the monument in 1934. The monument was reset, about 8 ft to the west, in 1976. Station WHITELEY was set in its original position.)

<sup>1</sup> Original monument set by Mason and Dixon in survey of 1763-67.

**TABLE 6.—Boundary monuments and traverse or triangulation stations from which the monuments were positioned or established.—Continued**  
(AS is Arc Stone, IS Intersection Stone.)

Monument Number	Traverse or triangulation station with comments on boundary monument
35 <sup>1</sup>	LONGFELLOW 1962
36 <sup>1</sup>	SHORT 1962
37	SCHULTIE 1962 (Original monument recovered and reset on boundary in 1976.)
38 <sup>1</sup>	SYLVESTER 1962
39 <sup>1</sup>	SANDTOWN 1962
40 <sup>1</sup>	SHOCKLEY 1961
41 <sup>1</sup>	LEE 1961
42	MILLPOND 1961 (One of the original boundary monuments, believed to be Monument No. 11, was reset at this point in 1976.)
43 <sup>1</sup>	VANEERDE 1961
44 <sup>1</sup>	SCHEPENIS 1961
45	TOWN 1961 (Original monument moved, about 5 ft to the west, and reset on boundary in 1968.)
46	TARAILA 1961 (Original monument recovered and reset on boundary in 1976.)
47 <sup>1</sup>	MARYDEL 1932 (Triangulation disk MARYDEL set in top of monument in 1932.)
48 <sup>1</sup>	WONDER 1961
49 <sup>1</sup>	SZELESTEI 1961
50 <sup>1</sup>	WALMSLEY 1961
51 <sup>1</sup>	FORD 1961
52	DUNNING 1961 (Original monument recovered and reset in 1961.)
53 <sup>1</sup>	PEARSONS 1961
54 <sup>1</sup>	MOFFETT 1961
55 <sup>1</sup>	KENT 1961
56 <sup>1</sup>	ROBINSON 1961
57 <sup>1</sup>	DEMON 1961
58 <sup>1</sup>	BENNETT 1961
59 <sup>1</sup>	QUILLEN 1961
60 <sup>1</sup>	WHARTON 1934 (Original monument recovered and reset on boundary in 1976.)
61	GOLTS 1961 (Boundary disk set in 1976.)
62 <sup>1</sup>	HERRINGS 1961
63	COLDWELL 1961 (Original monument moved about 5 ft to the west and reset on boundary in 1976.)
64	TOWNSEND 1961 (Boundary disk set in 1976.)
65 <sup>1</sup>	LOCKERMAN 1961
66 <sup>1</sup>	LAWRENCE 1934 (Triangulation disk LAWRENCE set in top of monument in 1934.)
67 <sup>1</sup>	WARWICK 1961
68 <sup>1</sup>	LEVELS 1961
69 <sup>1</sup>	CARTER 1961
70	BOHEMIA 1961 [Original monument set in present position in May 1950. See Bayliff (1959)]
71 <sup>1</sup>	JONES 1961
72	FRED 1961 (Original monument recovered and reset on boundary in 1976.)
73	PURPLE 1961 (Original monument recovered and reset on boundary in 1976.)
74 <sup>1</sup>	BETHEL RM 3 1961
75	WARREN 1961 (Original monument recovered and reset on boundary in 1977.)
76 <sup>1</sup>	EMERLE 1961
77	CHICOSKY 1961 (Original monument recovered and reset on boundary in 1976.)

**TABLE 6.—Boundary monuments and traverse or triangulation stations from which the monuments were positioned or established.—Continued**  
(AS is Arc Stone, IS Intersection Stone.)

Monument Number	Traverse or triangulation station with comments on boundary monument
78 <sup>1</sup>	LAGANO 1961
79	GLASGOW 1961 (One of the original stones, believed to be Monument No. 10, was reset at this point in 1976.)
80 <sup>1</sup>	OLAH 1961
81 <sup>1</sup>	OTTS 1958
82 <sup>1</sup>	TANGENT 1958 (Tangent Stone 1 set by Mason and Dixon in 1765. Tangent Stone 2, north and in contact with Stone 1, set by Graham in 1849.)
AS 1 <sup>1</sup>	ARC 1958
AS 2 <sup>1</sup>	BDRY MON 83 = Arc Stone 4
AS 3	BDRY MON 83 = Arc Stone 4 (Arc Stone 3 set by Graham in 1849.)
83 <sup>1</sup>	
AS 5 <sup>1</sup>	BDRY MON 83 = Arc Stone 4
IS 2	PRISM 1961 (Stone set by Graham in 1849.)
84 <sup>1</sup>	FOSTER 1961
85 <sup>1</sup>	PETERS 1961
86 <sup>1</sup>	SCOUTS 1961
87	MDP CORNER 1935 (Boundary stone set by Graham in 1849. MDP CORNER RM 2 set in top of stone in 1935.)

Results obtained from the C&GS resurvey of the Tangent Line give an average distance of 5,292 ft between stones set at 1-mile intervals by Mason and Dixon. This unit of 5,292 feet per mile is in close agreement with that of the colonial surveyors, which is confirmed by the following statement from the Mason-Dixon Journal:

*In April 1767 William Lukens (Surveyor General of the Province of Pennsylvania) told me that our statute yard was the thickness of a piece of parchment shorter than theirs, with which they measured the Tangent Line.*

Horizontal control data and descriptions for each station along the north-south boundary appear on pages 104 to 290. Data for the boundary monuments are arranged in numerical order by monument number, and the traverse or triangulation stations are arranged in alphabetical order. Positions for Monuments 25, 45, 63, 73, and 75, as determined in the 1961-62 survey, are included in the horizontal control data although these monuments were moved at a later date. The positions of these five monuments, in their present location on the boundary, are given on data sheets that follow those noted:

“This position is no longer valid.”

**Horizontal Control Data  
for North-South Boundary  
pages 104 to 290**



## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (Boundary Monument 0)  
ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Delaware-Maryland  
RECOVERED BY: R.W.T. YEAR: 1962 COUNTY: Wicomico-Sussex

OBJECT	BEARING	FEET	DISTANCE	METERS	DIRECTION
Azimuth Mark	S	74.935	22.840	00 00	00.0
Reference Mark # 2	SW	179.035	54.569	96 21	34.7
Reference Mark # 3	W	(30.876)	9.411	156 51	42.4
MD-DEL CORNER RM 4		156.39	47.667	188 10	32.7
R.H. 2 to R.H. # 3					

Station mark, Reference mark 2 and 3 were recovered and found in good condition. The Azimuth mark was recovered and found to have been hit by road machinery and the disk had been knocked out. The above observations were made by placing another disk in the hole to hold the old point. This Azimuth mark was replaced by a new mark to MD-DEL CORNER RM 4 as the old station can never be occupied again due to shelter erected over the monument and station. The new distance and directions checked with the previous data. Reference mark 2 has been covered over by fill it is about 12 inches below the surface of the ground.

The station is the U.S.C.&G.S. disk set in the top and the approximate center of the monument. It is located about 6 1/2 miles east of Delmar, 6.0 miles south of Sharpstown and 3 1/2 miles west of Harbola Springs, Maryland and on property owned by the states. It is a sand stone monument with the coat of arms on all four sides of the monument. It projects about 30 inches above the surface of the ground. The disk is stamped MD DEL CORNER 1932, is leaning to the south and has concrete poured around the base to insure the permanency of the monument. It has a 12 x 12 foot shelter erected over the monument. It is 101.0 feet north of the approximate center of state highway 467. The shelter has four 12 x 12 inch square red brick columns and has a conical shaped roof painted black and white.

A traverse connection was made to triangulation MD DEL CORNER RM 4, distance being (30.876 feet) and 9.411 meters east of station MD DEL CORNER RM 4.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (BOUNDARY MONUMENT 0)  
ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Md-Del Line BENCH MARK ALSO ☐  
RECOVERED BY: Lewis A. Lapine YEAR: 1974 COUNTY: Wicomico or Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles west of Delmar, Delaware.  
HEIGHT OF TELESCOPE ABOVE STATION MARK FEET.

OBJECT	BEARING	FEET	DISTANCE	METERS	DIRECTION
MD DEL CORNER 1932 RM 4 (Traverse Distance)	W	(30.87)	9.411		

The monument is located about 6.0 miles west of Delmar and at the southwest corner of Delaware and at the south end of the north and south line between Delaware-Maryland.

The mark, a sand stone monument with the coat of arms on the north and south sides of the monument and also on the east and west side. It has a U.S.C.&G.S. triangulation disk cemented in the top, stamped MD DEL CORNER 1932. The monument is broke at the base and leaning to the south. It has a 12 by 12 foot shelter erected over the monument.

This party has no data on the monuments that are established to the north of BOUNDARY MONUMENT 0. They are two small monuments that project 2 feet above the ground surface. One monument is 3.8 feet north and the other monument is 2.8 feet north-northeast.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MD DEL CORNER BDRY MONUMENT 0 = MIDDLE POINT \*  
STATE: DELAWARE - MARYLAND YEAR: 1932 SECOND ORDER

SOURCE G-12731 \* BDRY MON 35 (East-West Boundary)  
\* BDRY MON 0 (North-South Boundary)

GEODETIC LATITUDE	GEODETIC LONGITUDE	38 27 35.8698	75 41 38.4554	ELEVATION SCALED	11 METERS FEET
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STATE & ZONE	COORD	X	Y	PLANE AZIMUTH (from south)	PLANE AZIMUTH (from north)	CODE
DE	0700	420,578.26	167,622.63	- 0 10 21		0700
MD	1900	1,173,962.32	230,878.25	+ 0 49 11		1900

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \text{CR} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from south)	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from south)	PLANE AZIMUTH (from north)	CODE
AZ RM 1	261 37 52.0	261 37 52.0	261 48 13	0700	
AM RM 1	261 37 52.0	261 37 52.0	260 48 41	1900	

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD-DEL CORNER (BOUNDARY MONUMENT 0)  
ESTABLISHED BY: C.D.M. YEAR: 1932 STATE: Md-Del. Line BENCH MARK ALSO ☐  
RECOVERED BY: Lewis A. Lapine YEAR: 1974 COUNTY: Wicomico-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles west of Delmar, Delaware  
HEIGHT OF TELESCOPE ABOVE STATION MARK 4 FEET.

OBJECT	BEARING	FEET	DISTANCE	METERS	DIRECTION
Azimuth Mark	W	0.3	0.3	0 00	00.00
MD DEL CORNER 1932 RM 4 (Trav. Dist.)	W	(30.87)	9.411	10 23	11.9
RM 2	S	74.97	22.850	278 33	51.3
RM 3	SW	179.04	(54.571)	339 04	12.6
RM 2 to RM 3		156.30	(47.640)		

Distances and directions to azimuth mark, reference marks and prominent objects which can be seen from the ground at the station

The station mark was recovered and found to be leaning to the south, reference marks 2,3 and the azimuth mark were recovered and found in good condition as described in 1962.

The station mark, a sand disk stamped MD DEL CORNER 1932, is cemented in a drill hole in the top of Boundary Monument Number 0 or 35-B that projects 30 inches above the ground surface. It has a 12 by 12 foot shelter erected over the monument. It is 2.8 feet south of Monument 35-A, which was established in 1760.

No data available to check the horizontal directions or distance to the marks.

For additional information see description MD DEL CORNER 1932 RM 4.

HORIZONTAL CONTROL DATA

By the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 320a  
(11-6-65)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRANGULATION~~ <sup>TRAVERSE</sup> STATION  
NAME OF STATION: Boundary Monument 1

CHIEF OF PARTY: R. H. Tomlinson    YEAR: 1962    STATE: Maryland-Del-    COUNTY: Wicomico-Sussex  
Description, including sketch of object: The station is the center of the small cross inscribed in the apex and center of Boundary Monument No. 1. Located about 7.0 miles west of Delmar, Delaware, 5.0 miles south-southeast of Sharptown, Maryland, 3.5 miles east-northeast of Hardsale Springs, Maryland, in dense woods land. The property on the Maryland side is owned by Mrs May Twilley who lives at the first house west of the station and the land on the Delaware side is owned by Mr. Les Wright. It is a 12-inch square limestone monument projecting about 26 inches above the surface of the ground, and leans slightly to the south. The stone in general good condition. It has the letter M inscribed on the west side and P on the east side. A small cross was inscribed in the apex and center of the monument for traverse purpose on this date. It is 46.0 feet northeast of a 14-inch pine tree, 28.5 feet east-northeast on this date. It is 46.0 feet northeast of a 14-inch pine tree, 28.5 feet east-northeast of a standard metal witness post and marker and 16.6 feet northeast of a 12-inch oak tree.  
(A traverse connection was made to triangulation station TWILLEY, distance being (25.348 feet) and 7.726 meters southeast of station TWILLEY.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION    BOUNDARY MONUMENT 1 DEL MD    SECOND ORDER  
STATE    DELAWARE - MARYLAND    YEAR    1962

SOURCE: C-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 28 28.0711	ELEVATION SCALED	11 METERS FEET
GEODETIC LONGITUDE	75 41 42.5507		

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# OF Δ & ANGLE *
DE	0700	420,268.46	172,904.38	- 0 10 24
MD	1900	1,173,561.13	236,153.70	+ 0 49 08

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B-CR-Δ #1 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION TWILLEY

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Boundary Monument 2

CHIEF OF PARTY: R. W. Tomlinson    YEAR: 1962    STATE: Maryland-Del.    COUNTY: Wicomico-Sussex  
Description, including sketch of object: The station is the center of the inscribed cross at the apex  
and center of Boundary Monument No. 2. Located about 7.0 miles west-northwest of Del-  
mar, Delaware, 4.0 miles northeast of Mardela Springs, Maryland, 4.0 miles south-  
southeast of Sharptown, Maryland, in a dense woods land. The property on the Delaware  
side is owned by Mr. Clyde Cooper and the property on the Maryland side is owned by  
the Adkins Lumber Company. It is a 12-inch square granite stone projecting about 20  
inches above the surface of the ground, with the letter H inscribed on the west side  
and P on the east side. The monument has previously been broken off flush with the  
surface of the ground. At this date the stone was placed in its exact location, a  
small cross was inscribed in its top and center for traverse purpose. The stone was  
not reinforced on this date. It is painted orange on top and about half way down on  
the monument. Other than have been broken off the stone is in good condition. It is  
30.2 feet south-southeast of a standard metal witness post and marker, 8.6 feet north  
of a 12-inch oak tree and 6.0 feet east of a 30-inch triangular blazed oak tree.  
A traverse connection was made to triangulation station VINE, distance being (26.067  
feet) and 7.545 meters southeast of station VINE.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION    BOUNDARY MONUMENT 2 DEL MD  
STATE    DELAWARE - MARYLAND    YEAR    1962    SECOND ORDER

SOURCE    G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 29 20.2974	ELEVATION SCALED	14 METERS FEET
GEODETIC LONGITUDE	75 41 46.6445		
STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE MD	0700 1900	419,958.93 1,173,160.15	178,188.67 241,431.68
			W. LONG. W. ANGLE *
			- 0 10 27 + 0 49 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin^{-1} \frac{Y}{X}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From 0000)	PLANE AZIMUTH (From 0000)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION VINE



Form 325b  
(11-6-65)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
Traverse  
DESCRIPTION OF ~~TRIANGULATION~~ ~~INTERCOMPARISON~~ STATION  
NAME OF STATION: BOUNDARY MONUMENT 3

CHIEF OF PARTY: R. M. Tomlinson  
YEAR: 1962  
STATE: Delaware-Maryland  
COUNTRY: Sussex-Wicomico  
Description, including sketch of object: The station is a cross inscribed in the apex of the monument. It is located about 7 1/2 miles southwest of Laurel, Delaware, 4 1/2 miles northwest of Galatow, Maryland, 3.0 miles south-southeast of Sharptown, Maryland and on property owned by Mr. E. O. Wheatley.

It is a 12 x 12 inch square granite stone which projects about 24 inches above the surface of the ground and has the letter M on the west side of the monument and the letter P on the east side and is leaning a little to the south. It is 81.2 feet east of a standard metal witness post and marker, 7.8 feet north of a 10-inch oak tree and 6.5 feet south of a 16-inch oak tree.

A traverse connection was made to triangulation station COLUMBIA, distance being (83.149 feet) and 25.344 meters east of station COLUMBIA.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 3 DEL MD  
STATE DELAWARE - MARYLAND  
YEAR 1962  
SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 30 12.4905	ELEVATION SCALED	11 METERS FEET
GEODETIC LONGITUDE	75 41 50.7350		

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	$\theta$ OR $\Delta$ OR ANGLE
DE MD	0700 1900	419,649.79 1,172,759.61	183,469.62 246,706.33	- 0 10 29 + 0 49 03

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$  OR  $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION COLUMBIA

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-4-66)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF STATION

NAME OF STATION: BOUNDARY MONUMENT 4

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Delaware COUNTRY: Mexico  
Description, including sketch of object: Boundary Monument No. 4 is located on a small knoll, 2.0 miles southeast of Sharptown, Maryland; 7.5 miles west-southwest of Laurel, Delaware 7.0 feet west of the approximate center of a field road, 49.5 feet southwest of a U.S. Coast and Geodetic Survey metal witness post and on property owned by Mr. H. J. Rider.  
The monument leans slightly west but is considered in good condition. It is a 12 X 12 inch limestone monument marked with the letters M and P and projects about 25 inches above the ground surface.

A traverse connection was made to triangulation station RIDER 1962, distance being 47.617 feet 14.516 meters.  
Point observed and measured to was a small cross mark scribed on the apex of the monument.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 4 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1962  
SECOND ORDER

SOURCE: C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 31 04.6687	ELEVATION	13 METERS
GEODETIC LONGITUDE	75 41 54.8446	SCALED	FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	419,339.26	188,749.09
MD	1900	1,172,357.70	251,979.46

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin^{-1} \frac{Y}{X}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From true N)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION RIDER





## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

FILE 3426  
(11-8-55)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE  
DESCRIPTION OF TRIANGULATION AND TRAVEL STATION

## DESCRIPTION OF TRIANGULATION AND TRAVEL STATION

NAME OF STATION: BOUNDARY MONUMENT 6

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Maryland-Del. COUNTY: Wicomico-Suseex  
aware

Description, including sketch of object: The station is the small cross inscribed in the top and center of Boundary Monument No. 6. Located about 7.0 miles west-southwest of Laurel, Delaware, 1.75 miles southeast of Galestown, Maryland and 1.0 mile east of Sharpton, Maryland, on property owned by the Waller estate. The estate is being taken care of by a Mrs Mary Spicer who lives in Laurel, Delaware. It is a 12-inch square granite stone, chipped on all four corners near the top, with the letter H cut in on its west side and the letter P on the east side. The monument is plumb and in general good condition and projects about 24 inches above the surface of the ground. It is 33.0 feet west of the northwest corner of a cultivated field. A small cross was inscribed in its top and center for traverse purpose on this date.

A traverse connection was made to triangulation station COD, dist since being 46.458 meters and (158.98) feet west of station COD.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 6 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 32 49.0593	ELEVATION	5 METERS
GEODETIC LONGITUDE	75 42 03.0302	SCALED	

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	N	E
DE	0700	418,721.29	199,311.53
MD	1900	1,171,556.91	262,529.24
			- 0 10 38
			+ 0 48 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE SUR 30 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (Feet north)	PLANE AZIMUTH (Feet north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION COD



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

Form 5128  
(11-7-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## TRAVERSE

DESCRIPTION OF ~~BOUNDARY MONUMENT~~ STATION

NAME OF STATION: BOUNDARY MONUMENT 8

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Delaware COUNTY: Sussex  
Maryland  
Description, including sketch of object: Boundary Monument No. 8 is a 12 X 12 inch limestone monument marked with the letters M and P and projects about 26 inches above the surface of the ground. It is located in a heavy wooded area, 1.0 mile north of the small village of Grinstead, 2 1/2 miles north-northeast of Sharptown, 6.0 feet south of a 12-inch pine tree, 74.0 feet northwest of a U.S. Coast and Geodetic Survey metal witness post and marker, and on property owned by Mr. H. P. Porter.

The condition of the monument is considered poor as the top portion of the monument has been broken off at ground level, but is still setting in place on the foundation. The point observed and measured to was a small cross mark scribed on the apex of the monument.

A traverse connection was made to triangulation station PORTER 1962 distance being (74.196 feet) 22.615 meters.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 8 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 34 33.3796	ELEVATION	8 METERS
GEODETIC LONGITUDE	75 42 11.2279	SCALED	FEET

## STATE COORDINATES (FEET)

STATE & ZONE	CODE	B	Y	# COR. Δ 91 ANGLES
DE MD	D7DD 1900	418,102.88 1,170,755.78	209,866.93 273,071.94	- 0 10 43 + 0 48 50

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\delta \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From Isob)	PLANE AZIMUTH (From Isob)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION PORTER



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

Form 323b  
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE STATION

DESCRIPTION OF ~~TRIANGULATION~~ INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 9

CHIEF OF PARTY: R.W. Tomlinson    YEAR: 1962    STATE: Delaware-Maryland    COUNTY: Wicomico-Sussex  
Description, including sketch of object: Station is located 22 miles northwest of Salisbury Maryland, 8.0 miles south-southeast of Federalburg Maryland, on the property of Mr. Joseph Eilla. BOUNDARY MONUMENT NO. 9, a 12 x 12 inch square monument, projecting 50 inches from the ground surface. It is 9.7 feet west of a field road; 59.7 feet southeast of a standard metal witness post; 4.0 feet east-southeast of a 12 inch oak tree. A traverse connection was made to triangulation station WHITE 1934 distance being 10.435 meters and (34.245) feet east-southeast of station WHITE 1934.

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION    BOUNDARY MONUMENT 9 DEL MD  
STATE    DELAWARE - MARYLAND    YEAR 1934    SECOND    (INCHES)

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 35 25.4899	ELEVATION	8 METERS
GEODETIC LONGITUDE	75 42 15.3190	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	417,794.48	215,139.61
MD	1900	1,170,356.10	278,338.28

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \sin^{-1} \frac{Y}{X}$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From North)	PLANE AZIMUTH (From North)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION WHITE



HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 74-79  
117-714

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY  
DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 11 DEL MD  
NEAREST TOWN: Reliance  
CHIEF OF PARTY: C.L. Novak  
STATE: Delaware  
COUNTY: Sussex  
QUADANGLE NO.: Q380754  
YEAR: 1976  
DESCRIBED BY: R.G. Poust

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 11 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1976

SECOND ORDER

SOURCE: G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 37 09.74483	ELEVATION	12 METERS
GEODETIC LONGITUDE	75 42 23.53168	NO CHECK	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,169,554.66	288,874.43
DE	0700	417,175.67	225,688.51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  ON  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From meridian)	PLANE AZIMUTH (From meridian)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION DODD

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCE AND DIRECTIONS TO ATMOSPHERIC MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	METERS		FEET		DIRECTION
			BEARING	DISTANCE	BEARING	DISTANCE	

The position of this monument was found to be in the center of State Line Road. It was set under a 24-inch round manhole at this date. The original monument for this point was found in Denton, Maryland, and it was set on point north-south number 42. The statue of Maryland and Delaware agreed to setting the old stone where it could be viewed instead of under the road. The marker is located 9 miles northwest of Laurel, Delaware, 6 miles west-southwest of Seaford, Delaware, and 1 1/4 miles south of Reliance. It is on road right-of-way. To reach from the intersection of Maryland State Highways 392 and 577 and Delaware State Highway 20, go south on State Line Road for 1.15 miles to the manhole and the marker below the manhole. The surface mark is a Maryland-Delaware Boundary Disk stamped N-S NO. 11 1976, set in the top of a 12-inch concrete monument which is 20-inches below the top of the manhole. The sub-surface disk is set in an 8-inch mesh of concrete which is 48-inches below the surface. They are 99.9 feet northwest of a powerline pole numbered 34-1. 28.1 feet east of a witness post, and 26 feet east of a culvert at a T-ditch. For additional information, see description for station DODD 1962.



## HORIZONTAL CONTROL DATA

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 76-39  
(12-70)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION - BOUNDARY MONUMENT  
NEAREST TOWN. 12 Maryland  
CHIEF OF PARTY. C.L. Novak  
QUADRANGLE NO. 380754  
YEAR. 1976  
DESCRIBED BY: R.G. Poust

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 12 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976  
SECOND ORDER

SOURCE G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 38 07.29802	ELEVATION	NO CHECK	14 METERS
GEODETIC LONGITUDE	75 42 28.06623			FEET

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (From north)
MD	1900	1,169,112.24	294,690.86	+ 0 48 40
DE	0700	416,834.08	231,511.98	- 0 10 54

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B \sin \Delta$  FORMULA SELECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION RELIANCE

NOTE *	HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
	SURFACE STATION MARK		OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	UNDERGROUND STATION MARK			
OBJECT	BEARING	DISTANCE	DIRECTION	
		FEET		
		METERS		

The old Maryland-Delaware Boundary Monument number 12 was found in the prone position about 3 feet below the surface of the State Line Road. It was placed there by the Delaware Highway Department, when the road was paved in 1951. It was dug up at this date and reset 134 meters to the north and out of the roadway. The monument had been broken halfway in two sometime in the past. It was repaired at this date by the Delaware Highway Department and set in a large concrete base. The marker is located on the north side of Delaware State Highway 20 and Maryland State Highway 392 at the T-intersection of the two State Highways and State Line Road in Reliance.

The location of this marker is adequate to locate it with, no to reach is necessary.

The surface marker is a 12-inch square limestone monument set in a mass of concrete projecting one foot. It has an "M" carved in the west side, and the east side has been busted away where the "p" was. The sub-surface marker is a Maryland-Delaware Boundary Disk set in an 8-inch mass of concrete 48-inches below the surface. It is stamped N-S NO. 12 1976. They are 79 feet southeast of the southeast corner of a 2-story house, 40 feet north of the center of the T-intersection, 19 feet west-northwest of a powerline pole, 7 feet north-northwest of a telephone underground cable box, and 6.5 feet northwest of a powerline pole numbered UK 233.

For additional information, see description for station RELIANCE 1962.

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 232b  
(11-6-65)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

NAME OF STATION: Boundary Monument 13  
DESCRIPTION OF TRIANGULATION: ~~TRANGULATION~~ **TRANGULATION**

CHIEF OF PARTY: R.W. Tomlinson  
YEAR: 1962  
STATE: Delaware-Maryland  
COUNTY: Caroline-Sussex  
land  
Description, including sketch of object: Station is located about 1.0 mile north of the small settlement of Reliance, 5.0 miles southeast of Federalsburg Maryland, and about 5.5 miles west of Seaford Delaware, on the property owned by Mr. George Wright.  
Boundary Monument No. 13, a 12 X 12 inch square monument, projecting 30 inches from ground surface, with an M on the west side and a P on the east side. It is 26.9 feet east-southeast of a standard metal witness post; 50.3 feet east-southeast of a 12 inch pine tree; 68.6 feet east of a woods road.  
A traverse connection was made to triangulation station WRIGHT, distance being 17.075 meters and (55.889) feet east-southeast of station WRIGHT.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 13 DEL MD  
STATE: DELAWARE - MARYLAND  
YEAR: 1962  
SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 38 54.2896	ELEVATION SCALED	14 MILES FEET
GEODETIC LONGITUDE	75 42 31.7739		

STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE	0700	416,555.16	236,266.80
MD	1900	1,168,750.99	299,439.92

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi = \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

STATION OR OBJECT	GEODETIC AZIMUTH (from north)				PLANE AZIMUTH (from north)	COORD
	0	1	2	3		

POSITION DETERMINED BY TRAVERSE FROM STATION WRIGHT

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

OAK GROVE (Sussex-Caroline Counties, Del.-Md., J.B.Jr., 1934)--  
The station is a square sandstone monument projecting 24 inches above ground, a cross cut in top marks the station. This second-order station is approximately 150 yards W of sawn lumber factory, 54.3 feet WNW of a 40-inch oak tree, 32.6 feet NE of the center line of the main railroad track, and 2.05 feet NE of a Maryland-Delaware Boundary Marker. The station marker has an "M" on its W side and a "P" on its E side.

The Maryland-Delaware Boundary Marker is thus marked "P B & W R -- V.B. 3 - MARYLAND -- CAROLINE CO." on the W side and "P B & W R -- V.B. 1 -- DELAWARE -- SUSSEX CO." on the E side. The boundary marker projects about 4 feet above ground.

Reference marks are standard bronze disks set in concrete as described in note 11a.

Reference mark No. 1 is 240.26 feet NE of the station, and 1 foot W of a corner fence post. The mark projects 6 inches above ground and is stamped "OAK GROVE NO. 1 1934." Reference mark No. 2 is 146.69 feet E of the station, 66.15 feet SW of a 12-inch oak tree, and 3.67 feet WNW of the NW corner of a brick house occupied by employees of a sawn lumber factory. The mark projects 6 inches above ground and is stamped "OAK GROVE NO. 2 1934." Reference mark No. 3, azimuth mark, is approximately 0.5 mile SW of the station, approximately 100 yards SE of a white 2-story frame house, about 3 paces S of the center line of the dirt road, and 1 pace E of telephone pole No. 27. The mark projects 6 inches above ground and is stamped "OAK GROVE 3 1934."

To reach the station from the bridge over the Nanticoke River on U.S. Highway 13 at Seaford go N on U.S. Highway 13 for about 0.5 mile to a Y-road which is the junction of State Highway 20. Turn left (W) on State Highway 20 for about 4.7 miles to a T-road N and a Pyrol gasoline sign in the NW angle, turn right (N) on a tar road for about 1.5 miles to a railroad crossing, turn left on the N side of the crossing and follow a dirt road along the track for about 0.2 mile to the station.

OBJECT DISTANCE

SEAFORD  
R.M. No. 3 Az. Mk. (SW)  
approximately 0.5 mile 99 55 48.95  
R.M. No. 1 (NE) 240.26 feet 295 30 25.0  
R.M. No. 2 (E) 146.69 feet 352 16 01.7  
A 103-foot tower will clear all lines observed.

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: OAK GROVE (BOUNDARY MONUMENT NO. 14)  
ESTABLISHED BY: J.B. Jr. YEAR: 1934 STATE: Delaware-Maryland-  
RECOVERED BY: R.W. Tomlinson YEAR: 1962 COUNTY: Sussex -Caroline-

HEIGHT OF TELESCOPE ABOVE STATION MARK 30.93 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 33.43 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
WHITE 1934 - Azimuth Mark (R.M. 3)	SSW -	Approx. 0.5 mile	0 00' 00.00"
Reference Mark 1	NE -	240.512 - 74.247	23 24 26.8 -
Reference Mark 2	E -	146.690 - 144.711	219 03 53.2 -
Reference Mark 4	SE -	158.520 - 142.223	275 48 33.7 - 532 02 25.6 -

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION OAK GROVE BDRY MON 14 DEL MD

STATE DELAWARE - MARYLAND YEAR 1934

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	38 39	46.4537	ELEVATION	14.5 METERS
GEODETIC LONGITUDE	75 42	35.8620		48 FEET
STATE COORDINATES (FEET)				
STATE & ZONE	COORD	X	Y	B (100' Δ) Δ ANGLE "
DE	0700	416,247.70	241,545.01	- 0 11 00
MD	1900	1,168,352.13	304,711.77	+ 0 48 35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE BIRD Δ G FORMULA IN COLLECTING THE SECOND TERM.

TOSTATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CHIT
AZ MK RM 3	19 56 23.4	20 07 23	0700
AZ MK RM 3	19 56 23.4	19 07 49	1900

The station mark, reference marks 1, 2, and 3 was recovered as described and in good condition. A building is now on line to reference mark 2 and could not be measured to but was observed to. Reference mark 4 was established. It is located 2.7 feet north of a telephone pole, 19.2 feet southwest of the approximate center of the railroad tracks and - 55.2 feet southwest of the southwest corner of a cinder block building.

The description of to reach the station was adequate.

The monument is a 12 X 12 inch limestone monument marked with the letters M and P and projects 24 inches above the ground surface. A cross mark is scribed on the apex of the monument and used for triangulation station OAK GROVE 1934. The monument was recovered in good condition. It is located 2.05 feet northeast of the Caroline-Sussex County line marker, 32.6 feet northeast of the approximate center of the railroad tracks, 54.3 feet west-northwest of a 40-inch oak tree, 150 yards west of a sawn lumber factory, 2.0 miles north of Rolience, 4 1/2 miles southeast of Fodoralsburg, 5 3/4 miles west-northwest of Seaford and on property owned by W & R Kirwin of Cambridge, Maryland.



U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## TRANSVERSE

YEAR, 1962      STATE: Delaware - Mary - County: Caroline - Sussex  
land

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

THE UNIVERSITY OF CHICAGO PRESS

15 DEL MD  
YEAR 1962

POSITION

	ELEVATION SCALED	14 METERS FEET
•		
3.5969		
0.9435		

STATE COORDINATES (msec)		
X	Y	$\mu = \frac{1}{N} \sum_{i=1}^N x_i y_i$
415,940.89	246,821.12	- 0 11 02
1,167,953.95	309,981.52	+ 0 48 32

..(3H Δ 0 FORMULA NEGLECTING THE SECOND TERM

GEODETIC $\Delta$ 210037M from hands	PLANE $\Delta$ 210037M from hands	C 1108
10	10	
10	10	

URSE FROM STATION ALLEN

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

TRAVERSE  
DESCRIPTION OF TRAILING LANTERN ON HILLSIDE IN CROSSING  
IDARY MONUMENT 16

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 525b  
(11-8-65)

NAME OF STATION:	BOUNDARY MONUMENT	16

CHIEF OF PARTY: H.W. Tealinson      YEAR: 1962      STATE: Delaware-Maryland      COUNTY: Caroline-augusta

Description, including sketch of object: Station is located about 3.5 miles east of Federalsburg Maryland 6.5 miles southwest of Bridgeville Delereve. On the property owned by Mr. Ronald Johnson.

Boundary Monument No. 16, a 10 X 10 inch square monument, projecting 25 inches from the ground surface. It is 50.5 feet north of a east-west woods line; 115 feet - northeast of a standard metal witness post.

A traverse connection was made to triangulation station TANYARD, distance being 33,999 meters and (111,545)' feet east-northeast of station TANYARD.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	16 DEL MD
STATE	DELAWARE - MARYLAND	YEAR 1962

## SECOND-ORDER

source G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	0	1	2	3	4	5	6	7	8	9	ELEVATION SCALED 14 METERS PER FOOT
GEODETIC LONGITUDE	38	41	30.7938								
	75	42	44.0595								

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	$\sqrt{1124 \Delta_1 + 41 \Delta_2} + 1$
DE	0700	415,631.49	252,101.68	- 0 11 05
MD	1900	1,167,553.11	315,255.68	+ 0 48 30

\* PLANE AZIMUTH WAS KEEN COMPLETELY THE  $\Delta$  WITH  $\Delta$  Q: FORMULA NEGLECTING THE SECOND TERM

PLANE AZIMUTH WAS RECOMPUTED BY THE METHOD OF PARALLEL INTERSECTING THE SECOND LINE	TORSTON OR OBJECT	GEODESIC AZIMUTH (From north)	PLANE AZIMUTH* (From north)	CODE
		0	0	

# POSITION DETERMINED BY TRAVERSE FROM STATION TANYARD

Form 525b  
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

(11-8-55)

TRAVERSE

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 17

CHIEF OF PARTY: R. W. Tomlinson      YEAR: 1962      STATE: Maryland-Delaware      COUNTRY: Caroline-Suseex

Description, including sketch of object: The station is the cross inscribed in the top and center of Boundary Monument No. 17. Located about 6.5 miles west-southwest of Bridgeville, Delaware, 3.5 miles east-northeast of Federalsburg, Maryland and in a cultivated field 200.0 feet north of the centerline of State Highway 318 and State Highway 306 and 150.0 feet east of the centerline of a graveled driveway. It is a 12-inch square granite stone projecting about 30 inches above the surface of the ground, leans about 6 degrees to the south, chipped badly on the east side, with the letter M cut in on its west side and P on the east side. A small cross was inscribed in its top and center for a traverse purpose on this date.

A traverse connection was made to triangulation station ATLANTA, distance being 93.746' meters and 307.756 Y feet north of station ATLANTA.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION

STATE	DELAWARE - MARYLAND	YEAR	1962
-------	---------------------	------	------

## SECOND OMADEM

SOURCE C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	°	'	"	ELEVATION SCALED	144 METERS FEET
38 42	22.9882				
75 42	48.1584				

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	$\theta = \tan^{-1} \frac{E}{N}$ or Azimuth
DE	0700	415,323.59	257,384.02	- 0 11 08
MD	1900	1,167,153.73	320,531.63	+ 0 48 27

<sup>6</sup> PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA  $\Delta \alpha = \Delta \alpha \cos \Delta \delta$ . FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEOMETRIC AZIMUTH (from north)	PLANE AZIMUTH * (from zenith)	LODGE
	$\alpha$	$\alpha$	$\alpha$

### POSITION DETERMINED BY TRAVERSE FROM STATION ATLANTA





HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

Form 5230  
(11-2-78)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE

DESCRIPTION OF TRAVERSE

NAME OF STATION: BOUNDARY MONUMENT 19

CHIEF OF PARTY: R. W. Tomlinson - YEAR: 1962 - STATE: Maryland-Del. - COUNTY: Caroline, Sussex  
Description, including sketch of object: The station is the center of a small cross inscribed in the top and center of the Boundary Monument No. 19. Located about 6.0 miles west of Briggsville, Delaware, 4.0 miles northeast of Federalsburg, in a dense woods land and on property owned by Mr. Gilbert Kindig. The monument is a 12-inch square granite stone projecting about 30 inches above the surface of the ground, with the letter H cut in on the west side and the letter P on the east side. The monument was covered in good condition, sturdy and plumb. It is 38.7 feet east-northeast of a standard metal witness post and marker, 13.0 feet south of the approximate center-line of a track woods road and 9.6 feet southeast of a 4-trunked oak tree. A traverse connection was made to triangulation station KINDIG, distance being 12.995 meters and (42.634) feet east of station KINDIG.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 19 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 44 07.4207	ELEVATION SCALED	13 METERS FEET
GEODETIC LONGITUDE	75 42 56.4135		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	414,703.67 1,166,350.78	267,951.17 331,085.93

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  COS  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION KINDIG

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

NDAA FORM 76-39  
112-701

**DESCRIPTION** 26 TRIANGULATION STATION  
Caroline  
**STATE:** Delaware      **COUNTY:** Sussex  
QUADRANGLE NO.: Q380754  
YEAR: 1976  
DESCRIBED BY: R.G. Pouet

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION.	BOUNDARY MONUMENT 20 DEL MD	
STATE.	DELAWARE - MARYLAND	VSAR 1976

SECOND-DROGA

SOURCE G-10742  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE.	38 45 00.58278	ELEVATION NO CHECK	13 METERS 0.000
GEODETIC LONGITUDE.	75 43 00.62375		

STATE COORDINATES (feet)				
STATS & ZONE	COORD	N	E	$\theta$ (DEG) $\Delta$ 40' ANGLE
HD	1900	1,165,961.61	336,458.68	+ 0 48 19
DE	0700	414,387.67	273,330.48	- 0 11 16

\* THAT A PRIORITY WAS SEEN COMPLETED BY THE A JOE V G1 FORMING A NEGLECTING THE SECOND TEAM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION CHARLES

The old Maryland-Delaware crown stone was recovered in the prone position about 150 feet southeast of its computed position. It was reset at this date.

The monument is located in a wooded area about 6 miles west of Brigsaville, Delaware, 5 miles northeast of Federalsburg, and on property owned by Mr. Samuel G. Mitchell. Mr. Mitchell lives in the first house to the southwest of the monument.

To reach this area from the intersection of Main Street and Central Avenue in Federalburg, Maryland, go east on State Highway 318 which is E. Central Avenue for 0.35 mile to a junction of State Highway 318 and 306. Keep left and go north-northeast on State Highway 306 for 4.2 miles to a fork, keep left on gravelled road, go north-northeast for 0.5 mile to a power line pole on the right and the azimuth mark, continue north-northeast on a gravelled road for 0.2 mile to the southwest corner of a wooded area and the point on the right 250 feet from the southwest corner of the timber.

The point is marked by a 1-inch cutcross in the top of the 12-inch limestone monument. It has the Pennsylvania Coat of Arms carved in the east side and the Calvert's Coat of Arms carved on the west side. The sub-surface mark is a Maryland-Belaware Boundary Disk stamped N-S NO. 20 1976, set in a 10-inch mass of concrete 38 inches below the surface. They are 251 feet northeast of a triangular blazed tree at the point where you leave the truck, 84 feet north of a witness post, 62 feet south of a witness post, 8 feet southeast of a 14-inch pine tree with a triangular blaze, and 8 feet west of a dirt field road.

For additional information, see description for Triangulation Station CHARLES 1962.



HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 923a  
(11-6-65)

DESCRIPTION OF MONUMENT

NAME OF STATION: BOUNDARY MONUMENT 21

CHIEF OF PARTY: R. H. Tomlinson YEAR: 1962 STATE: Delaware-Mary County: Caroline-Sussex  
land  
Description, including sketch of object: Station is located about 6.0 miles northeast of Federalburg  
Maryland, 6.5 miles west-northwest of Bridgeville Delaware.  
Boundary Monument No. 21, a 12 x 12 inch square monument, with the letter M  
on the west side and P on the east side, projecting about 30 inches from the ground.  
It is 9.0 feet south of a woods road; 3.5 feet west of a 10 inch oak tree; 12.5 feet  
northeast of a 6 inch holly tree.  
A traverse connection was made to triangulation MARSH, distance being 34.089  
meters and (111.84) feet east-northeast of station MARSH.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 21 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 45 51.8181	ELEVATION	7 METERS
GEODETIC LONGITUDE	75 43 04.6830	SCALED	FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	414,083.14	278,514.95
MD	1900	1,165,547.28	341,636.72

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$   $\cos \Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION MARSH

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-4-45)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRANGULATION~~ ~~INTERSECTION~~ STATION

TRAVERSE

NAME OF STATION: Boundary Monument 22

CHIEF OF PARTY: R. W. Tomlinson Year: 1962 STATE: Maryland-Del. County: Caroline-Sussex  
aware

Description, including sketch of object: The station is the center of the small cross inscribed in the top and center of Boundary Monument No. 22. Located about 6.5 miles northeast of Federalsburg, Maryland, 6.5 miles west-northwest of Bridgeville, Delaware, in a dense woods and brush and on property owned by Miss Sadie DeVore. It is a 12-inch square granite stone projecting about 30 inches above the surface of the ground, with the letter M cut in on its west side and P on the east side, a small cross was inscribed in the top and center of the monument on this date for traverse purpose. In general the monument is in good condition. It is 119.7 feet southeast of a standard metal witness post and marker.

A traverse connection was made to triangulation station DEVORE, distance being (115.09 feet) and 35.001 meters east-southeast of station DEVORE.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 22 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1962

SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38° 46' 43.9497	ELEVATION	12 METERS
GEODETIC LONGITUDE	75° 43' 08.8044	SCALE	0

STATE COORDINATES (FEET)				
STATE & ZONE	CODE	X	Y	# (NAD 83) ANGLE *
DE	0700	413,774.12	283,789.92	- 0 11 22
MD	1900	1,165,146.88	346,905.36	+ 0 48 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # (NAD 83) FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH* (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION DEVORE

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

Form 325b  
(11-6-65)

U.S. DEPARTMENT OF COMMERCE - COMST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF STATION  
NAME OF STATION: BOUNDARY MONUMENT 23

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Maryland COUNTY: Sussex  
Description, including sketch of object: Boundary Monument No 23 is a 12 x 12 inch limestone monument marked with the letters M and P and is considered in good condition except it has been broken off about 5 inches below the ground surface. The top portion of the monument is in a prone position at the base of the monument. It is located 72.0 feet east of a 12-inch triangular blazed oak tree, 73.54 feet and 22.416 meters east-northeast of triangulation station MADE 1962, 73.5 feet east of a standard metal witness post and marker, 0.5 mile south of the Fountainville, Interstate Lookout Tower, 7.0 miles northeast of Bridgeville, Delaware, 8 1/2 miles southeast of Denton, Maryland and on property owned by Mr. E. Harper of Bridgeville, Delaware.  
Point observed and measured to was a cross mark scribed in the approximate center of the base of the monument.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 23 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1962  
SOURCE: C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 47 36.6018	ELEVATION SCALED	12 METERS FEET
GEODETIC LONGITUDE	75 43 12.9887		

STATE COORDINATE (Feet)			
STATE & ZONE	CODE	N	E
DE	0700	413,460.44	289,117.68
MD	1900	1,164,740.89	352,226.61

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S. U.M. Δ. U. FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From meridian)	PLANE AZIMUTH (From meridian)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION MADE



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 3526  
(11-8-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRANGULATION~~ <sup>TRAVERSE</sup> STATION

NAME OF STATION: BOUNDARY MONUMENT 24

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Maryland-Del- County: Caroline-Sussex

Description, including sketch of object: The station is the small cross inscribed in the top and center of Boundary Monument No. 24. Located in a low, swamp area, in a dense timber, on property owned by Mr. Joseph Barley; located about 8.0 miles southeast of Denton, Maryland, 8.0 miles northwest of Bridgeville, Delaware and about 0.5 mile north of the Fountainville, Interstate Fire tower. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground, leans slightly to the northwest, with the letter M cut in on its west side and P on the east side, a small cross was inscribed in its top and center for traverse purpose on this date. It is 120.0 feet southeast of a 24-inch dead tree, 90.0 feet east of a 30-inch dead tree and 63.9 feet east of a standard metal witness post and marker.

A traverse connection was made to triangulation station COON, distance being, 14.815 meters and (48.50 feet) east of station COON.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 24 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962  
SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION  
ELEVATION SCALED 15 METERS  
GEODETIC LATITUDE 38 48 28.5798  
GEODETIC LONGITUDE 75 43 17.1431

SECOND ORDER

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	N	E	PLANE AZIMUTH (From north)	CODE
DE	0700	413,149.03	294,377.26	- 0 11 28	
MD	1900	1,164,338.36	357,479.72	+ 0 48 09	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin^{-1} \frac{Y}{X}$  FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION COON

Form 5256  
(11-6-65)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

NAME OF STATION: **BOUNDARY MONUMENT 25**  
CHIEF OF PARTY: **R. W. Tomlinson** Year: **1962** State: **Maryland** Del-  
aware County: **Caroline-Sussex**

DESCRIPTION OF TRAVERSE  
Description, including sketch of object: The station is the small cross inscribed in the top and center of Boundary Monument No. 25. It is a 12-inch square granite stone projecting about 30 inches above the surface of the ground, plumb and in good condition. It has the Coat of Arms on the west and east sides and is in a north and south fence line, 18.5 feet east of the centerline of a traveled road, 9.5 feet north of the centerline of a traveled driveway and 4.6 feet west of a standard metal witness post and marker. A traverse connection was made to triangulation station LEDENHAM, distance being 1,316 meters and (4,324) feet west of station LEDENHAM.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 25 DEL MD** (see NOTE below)  
STATE: **DELAWARE - MARYLAND** YEAR: **1962** SECOND ORDER #

SOURCE: **G-12731**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38° 49'	20.7707	ELEVATION	16 METERS
GEODETIC LONGITUDE	75° 43'	21.2719	SCALED	FEET

STATE COORDINATES (Feet)				
STATE & Zone	CODE	X	Y	# UN Δ & ANGLE °
DE	0700	412,839.86	299,658.38	- 0 11 30
MD	1900	1,163,937.69	362,754.41	+ 0 48 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # UN Δ & FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (Feet north)	PLANE AZIMUTH (Feet north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION LEDENHAM

NOTE  
Monument moved to new location on boundary.  
This position is no longer valid. See  
BOUNDARY MONUMENT 25, 1977.

## HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 25  
ESTABLISHED BY: C. L. Novak  
RECOVERED BY: C. L. Novak  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile south of Hickman

STATE: Md.-Del. COUNTY: Caroline-Sussex  
YEAR: 1962 YEAR: 1977 BENCH MARK(S) ALSO ☐

SECOND UNDER

NAME OF STATION: BOUNDARY MONUMENT 25 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1977

SOURCE: G-11084  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 49 20.81214	ELEVATION	17.1 METERS
GEODETIC LONGITUDE	75 43 21.27535		52 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	COUNTY	X	Y
DE MD	0700 1900	412,839.60 1,163,937.36	299,662.58 362,758.59
			- 0 11 30 + 0 48 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B OR  $\Delta$  41 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NAME OF STATION: BOUNDARY MONUMENT 25

ESTABLISHED BY: C. L. Novak YEAR: 1962 STATE: Md.-Del. BENCH MARK(S) ALSO ☐

RECOVERED BY: C. L. Novak YEAR: 1977 COUNTY: Caroline-Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile south of Hickman

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

The monument was recovered and found in good condition in what appeared to be the same location as stated in the 1962 description. After the angle and distance at station LEDENHAM were made, it was found that the monument was about 45 degrees further to the north and 0.591 meters further away from the station than stated in the 1962 description. A new traverse connection was then made from triangulation station LEDENHAM 1962.

For additional information, see recovery description below for station LEDENHAM 1962.

NAME OF STATION: LEDENHAM  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: C. L. Novak  
YEAR: 1962 STATE: Delaware  
YEAR: 1977 COUNTY: Sussex

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Aslauth Mark Reset 1962	N	(0.7 mile)		0 00 00.0
RM 1	SE	29.04	8.851	131 25 02
Boundary Monument 25	NW	6.253	1.906	316 32 26.8
RM 2	NNW	38.04	11.595	355 36 09.7
RM 1 to RM 2		62.24	18.970	
Boundary Monument 25 to RM 2		33.40	10.182	
Boundary Monument 25 to RM 1		35.26	10.750	
No other objects V.G.				

The station and all marks were recovered and found in good condition as previously described.

After a check was made, it was found that an underground telephone cable had been put in where the old monument was located. Computations showed that the monument had been reset on the boundary 1.279 meters north of its original position.

A new witness post was set 3 feet northwest of the station mark and 3 feet southwest of the boundary monument.



HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

See Station HICKMAN

Form 323b  
(11-6-55)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF ~~TRAVERSE~~ ~~BOUNDARY MONUMENT~~ ~~STATION~~  
NAME OF STATION: BOUNDARY MONUMENT 26

CHIEF OF PARTY: R.W. Tomlinson Year: 1962 State: ~~Maryland~~ <sup>Delaware</sup> Country: ~~Caroline~~ <sup>Kent</sup>  
Description, including sketch of object: The Boundary Monument No. 26 is located in the small village of Hickman, Delaware-Maryland, 19.0 feet west of the approximate center of a macadam road, 28.6 feet southeast of a powerline pole # 76-6A, 71.0 feet southeast of the southeast corner of the Hickman, General Store, 7.0 miles southeast of Denton, Maryland, 8.0 miles northwest of Greenwood and on State property.

A traverse measurement was made to triangulation station HICKMAN 1962, distance being 40.565 meters 133.087 feet.  
Point observed and measured to was a small cross mark scribed on the apex of the monument.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 26 DEL HD  
STATE DELAWARE - MARYLAND YEAR 1962  
SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 50 13.1783	ELEVATION SCALED	16 METERS FEET
GEODETIC LONGITUDE	75 43 23.3693		

STATE COORDINATES (FEET)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	412,533.39 1,163,539.33	304,961.44 368,051.07

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta$  BY FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from meridian)	PLANE AZIMUTH (from meridian)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION HICKMAN

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 53a  
(11-4-65)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~BOUNDARY MONUMENT~~ TRAVERSE STATION  
NAME OF STATION: BOUNDARY MONUMENT 27

CHIEF OF PARTY: R. V. Tomlinson / Year: 1962 / State: ~~Maryland~~ Delaware / Country: ~~Maryland~~ Kent  
Description, including sketch of object: Boundary Monument NO. 27 is a 12 x 12 inch limestone monument projecting about 16 inches above the ground surface and marked with the letters M and P. The monument is considered in good condition except small chips off of the corners and is leaning slightly south.  
It is located 154.0 feet north of the witness post, 95.0 feet south of a fence line, 155.6 feet north of a fence line, 1.0 mile north of Hickman, 6.0 miles southeast of Denton end on property owned by Mr. Carl Parker.  
Point observed and traversed too was a small cross mark scribbled on the apex of the monument.

A traverse measurement was made to triangulation station PARKER 1962 distance being 48,785.9 meters and (160,059) feet.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 27 DEL HD  
STATE DELAWARE - MARYLAND YEAR 1962  
SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

DEG. LATITUDE	DEG. LONGITUDE	ELEVATION SCALED	17 METERS FEET
38 51 05.1380	75 43 29.4870		

STATE COORDINATES (FEET)			
STATE & ZONE	CODE	N	E
DE HD	0700 1900	412,225.29 1,163,140.12	310,219.21 373,302.42
			- 0 11 36 + 0 48 01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	DEG. AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION PARKER

HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 3426  
(11-6-65)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF TRAVERSE/INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 28

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Del- COUNTY: Caroline-Kent  
Description, including sketch of object. The station is the small cross inscribed in the top and center of Boundary Monument No. 28. Located about 219.0 feet east of a timberline, in a small field planted to small pine trees, about 5.5 miles east-southeast of Denton, Maryland, 2.0 miles south of the small settlement of Burrsville, 2.0 miles north of the small settlement of Hickman and on property owned by the Gladfelter Pulpwood Company of Fredericksburg, Virginia. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground, plumb and in general good condition, with the letter M cut in on its west side and P on the east side. A small cross was inscribed in its top and center for traverse purpose on this date.

A traverse connection was made to triangulation station PULP, distance being 66.799 meters and (219.156 feet) northeast of station PULP.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 28 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961 SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	36 51 57.3364	ELEVATION SCALED	18 METERS FEET
GEODETIC LONGITUDE	75 43 33.6184		

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	411,916.33	315,301.15
MD	1900	1,162,739.63	378,577.92

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi = \arcsin \frac{y}{r}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION PULP

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

FORM 522b  
(11-64)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE  
DESCRIPTION OF BOUNDARY MONUMENT STATION  
NAME OF STATION: BOUNDARY MONUMENT 29

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Caroline-Kent  
squares  
Description, including sketch of object: The station is the small cross inscribed in the top and center of Boundary Monument No. 29. Located in a north and south fenceline between two cultivated fields, about 5.5 miles east of Denton, Maryland and about 1.0 mile south of the small settlement of Burrsville, Maryland. It is a 12-inch square granite stone projecting about 25 inches above the surface of the ground, leans slightly to the south, in general in good condition. The monument has the letter H cut in on its west side and the letter P on its east side and a small cross was inscribed at its top and center for traverse purpose on this date. It is 94.5 feet southeast of a standard metal witness post and marker and 6.0 feet north of a 9-inch elm tree.  
A traverse connection was made to triangulation station HARVEST, distance being 28.567 meters and (95.724) feet southeast of station HARVEST.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 29 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND ORDER

SOURCE: C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 52 49.6936	ELEVATION SCALED	20 METERS FEET
GEODETIC LONGITUDE	75 43 37.8162		
STATE COORDINATES (feet)			
STATE & ZONE	CLUT	N	Y
DE	0700	411,602.31	320,799.19
MD	1900	1,162,333.80	383,889.43
			- 0 11 42 + 0 47 56

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  AND  $\lambda$  FORMULA SELECTING THE SECOND TERM

TOTAL STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION HARVEST



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

**BURRS-BOUNDARY MONUMENT** (Caroline County, Md., Kent County, Del., J.B. Jr., 1934).--This second-order station is on the Maryland-Delaware State line, at Burreville, about 5 1/2 miles E of Denton, Maryland, on the property line of Mr. Leonard Vass in Delaware, and Mr. C.I. Harvey, in Maryland. The boundary monument was replaced by a standard triangulation mark which projects about 14 inches above the surface of the ground, and is 11 inches square. The monument is 63 paces N along the fence from the N line of the barns, 18.50 meters S of an 18-inch elm tree that is in the NE angle of the intersection of the ditch that goes 1 meter W of the station, and an E-W drain ditch, the station is in the NW corner of the lot.

Surface, underground, reference, and azimuth marks are standard bronze disks set in concrete, as described in notes 1a, 7a, and 11e.

Reference mark No. 1 (azimuth mark) is E of the station, projecting 6 inches above the ground, on land owned by Mrs. Howard Hopkins, 38 paces NNE of the NE corner of the barn, 26 paces SE of a 2-inch gum tree.

Reference mark No. 2 is E of the station, projects 5 inches above ground, on the E side of the lot, about midway of the E side, 1 meter W of the fence.

Reference mark No. 3 is S of the station, projects 6 inches above ground, on the W side of a drain ditch that is between the two properties, on the Maryland side, on the E side of a cultivated field, about 30 paces N of the barn.

To reach from the courthouse in Denton, Maryland, go E along Market Street for 0.35 mile to Sixth Street. Turn left on Sixth Street and go 1.6 miles. Turn right on pavement at sign "Burreville 5 miles." Go 5.0 miles to Maryland-Delaware State line sign in Burreville. Go 45 yards E of the state line sign, and turn left between two large trees on the E side of the second house on the left. Go 55 yards along W side of fence on grass between fence and garden to the N end of the garden, from here go diagonally (NW) across the lot for 60 paces to the station.

A 90-foot tower necessary.

**OBJECT** DISTANCE  
DENTON  
R.M. 1 (Az. Mk.) 0.4 mile  
R.M. 2 29.613 meters  
R.M. 3 23.190 meters

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BURRS (BOUNDARY MONUMENT 30)  
ESTABLISHED BY: J.B. Jr.  
RECOVERED BY: R.W. Tomlinson  
YEAR: 1954  
STATE: Delaware-Maryland  
COUNTY: Kent-Caroline

Detailed statement as to the fitness of the original description, including marks found, attempts, changes made, and other pertinent facts:  
The station mark, reference mark 1 (azimuth mark), reference mark 2 and 3 was recovered as described and found to be in good condition. Reference mark 1 (azimuth mark) is no longer visible from the station. It was destroyed. The station was not observed from due to water in the vicinity of the station mark. Reference mark 4, surface and subaerial mark was established and observed from.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BURRS BORN MCM 30 DEL MD  
STATE: DELAWARE - MARYLAND  
YEAR: 1934  
SECOND ORDER

GROUP: G-12731

GEODETIC LATITUDE	38 53 42.1364	ELEVATION	17 meters
GEODETIC LONGITUDE	75 43 41.9948	SCALE	

STATE COORDINATES (1954)				
STATE & ZONE	CODE	N	E	HEIGHT
DE	0700	411,289.99	326,105.90	- 0 11 45
MD	1900	1,161,929.50	389,169.64	+ 0 47 53

* PLANE AZIMUTH WAS COMPUTED BY THE 8-10-41 FORMULA MEASURING THE SECOND IRM.			
TOBATION OF OBJECT		GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)
AZ MK RM 1		253 05 02.7	253 16 47
AZ MK RM 1		253 05 02.7	252 17 09

## R

The station is located in northeast section of Burreville, crosses the State Line and on property owned by Mr. R. H. Stafford. Boundary Monument replaced by USGS concrete mark with standard disk stamped BOUNDARY MONUMENT BURRS 1934, set in top of a square monument which projects about 5 inches above ground surface. It is 2.0 feet southeast of a metal witness post, 3.0 feet east of a small ditch, 35.0 feet south of a large ditch and 190 feet south of State Highway 317. A traverse connection was made from station BURRS RM 4 to BOUNDARY MONUMENT BURRS 1934 being a distance of 25.046 meters (82.172 feet).

OBJECT	NOTE	1961 DISTANCE	BEARINGS	1961 DIRECTIONS
R.M. NO. 2	11a -	97.22 ft. 29.652 m.	{ E }	0 00 00.00
R.M. NO. 3	11a -	76.05 ft. 23.180 m.	{ S }	97 25 59.5
R.M. NO. 4	11a -	(62.17 ft) 25.046 m. (trav.)	{ SSS }	117 22 59.9

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 523b  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
(11-8-65)

CHIEF OF PARTY:	R. M. Tomlinson	Year: 1962	State: Maryland-Delaware	County: Caroline-Kent
<p>Description, including sketch of object: Station is located about 1.0 mile north of Burrowsville, located on the Maryland-Delaware State line, about 5.5 miles east-northeast of Denton Maryland. On the property owned by Mr. Smith and farmed by Mr. Larimore.</p>				

To reach the station from the general store in Burrville, go north for 0.05 miles to a fork, keep the right fork and continue northerly for 0.25 mile to a dead road right, turn right, go northeasterly on the macadam road for 0.7 mile to a dead road right, continue north for 0.15 mile to a field road on the left, turn left, meet on the field road for 0.2 mile to a fence corner at the end of a field, here turn right and go north for 0.1 mile to corner between two fields, turn left, go west across the field for 0.2 mile to the end of the field and a north-south fence line, go south for 0.1 mile to the southeast corner of the large area of woods and station.

Boundary Monument No. 31, a 12 inch square monument, with the letter D on the east side and the letter P on the west side, projecting about 30 inches from the ground surface. It is 30.5 feet north of a 34 inch oak tree with triangle blaze; 23.5 feet south of a 10 inch pine tree.

8.381 A traverse connection was made to triangulation station KÖRNER, distance being 8.381 meters and (27.49) feet northwest of station KÖRNER.

NAME OF STATION:	BOUNDARY MONUMENT	31 DEL MD
STA 10	DELAWARE - MARYLAND	YEAR 1962

SOURCE: C-12731  
NO OBSERVATION CHECK ON THIS POSITION

NO OBSERVATION CHECK ON THIS POSITION

GEODESIC LATITUDE GEODESIC LONGITUDE	U 38 75	V 54 43	W 34.2786 46.0994	ELEVATION SCALED	19 METERS FEET
STATE & ZONE	STATE COORDINATES (feet)				
DE HD	CODE	X	Y	Z	$\phi$ UR $\Delta$ $\phi$ INCL $\Delta$
	0700 1900	410,983.54 1,161,531.60	331,382.19 394,439.54	- +	0 11 47 0 0 47 51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\Delta$  ON  $\Delta$  FORMULA MEETING THE SECOND TERM.

TOPOGRAPHIC POSITION	TOPOGRAPHIC OBJECT	GEOROTIC AZIMUTH (from north)	PLANE AZIMUTH <sup>a</sup> (from north)	CODE
		0	0	

### POSITION DETERMINED BY TRAVERSE FROM STATION KORNER

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 322b  
(11-8-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF ~~TRANGULATION~~ **INTERSECTION** STATION  
NAME OF STATION: BOUNDARY MONUMENT 32

CHIEF OF PARTY: R. W. Tomlinson Year: 1961 STATE: Maryland-De-  
over  
Description, including sketch of object: The station is located about 0.0 miles east-northeast of  
Denton, Maryland, 1.8 miles north of the small settlement of Burrsville, in a culti-  
vated field and on property owned by Mr. Edgar Pierson. It is a 12-inch square lime-  
stone monument projecting about 24 inches above the surface of the ground. The mon-  
ument was leaning to the south at about a 45 degree angle and was plumbed on this  
date. A small cross was inscribed in its top and center for traverse and intersection  
purpose on this date. The monument is in good condition with the letter M cut in its  
west side and the letter P on its east side.  
A traverse connection was made to triangulation station PIERSON, distance being  
0.653 meters and (2.142 feet) east of station PIERSON.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 32 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER #

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 55 26.5949	ELEVATION	18 METERS
GEODETIC LONGITUDE	75 43 50.2594	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	410,672.92 1,161,129.22	336,676.14 399,727.02

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi = \sin^{-1} \frac{Y}{R}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from true)	PLANE AZIMUTH (from true)	CODE
		0	0	

POSITION DETERMINED BY TRAVERSE FROM STATION PIERSON

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 322b  
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF TRAVERSE

NAME OF STATION: BOUNDARY MONUMENT 33

CHIEF OF PARTY: R.W. TOLINSON YEAR: 1962 STATE: Maryland-Del- County: Queen Anne's-shore Kent  
Description, including sketch of object: Station is located in a cultivated field, on the property owned by Mr. Steward, about 1.0 mile south of Whiteleyburg, about 4.0 miles southeast of Greenboro Maryland. It is a 12 inch square monument, projecting about 30 inches from ground surface, it is slightly out of plumb. It is 130 feet south of the east-west true line; about 500 feet west of north-south tree line.  
A traverse connection was made to triangulation station STEWARD, distance being 91.558 meters and (300.538/feet) southeast of station STEWARD.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 33 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND UNDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 56 18.7544	ELEVATION SCALED	18 METERS FEET
GEODETIC LONGITUDE	75 43 54.4127		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	410,362.91	341,954.23
MD	1900	1,160,727.72	404,998.66
			- 0 11 53 + 0 47 46

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  UN  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION STEWARD



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA FORM 78-39  
(12-70)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION Kent  
BOUNDARY MONUMENT 34 STATE: Maryland COUNTY: Caroline  
NEAREST TOWN: Whiteleysburg  
CHIEF OF PARTY: C.I. Novek  
QUADRANGLE NO. Q380754  
YEAR: 1976 DESCRIBED BY: R.G. Poust

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 34 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976  
SOURCE G-10742  
NO OBSERVATION CHECK ON THIS POSITION  
SECOND ORDER #

SURFACE STATION MARK	OBJECT	BEARING	DISTANCE		DIRECTION
			FEET	METERS	
HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	1	HEIGHT ABOVE STATION MARK	METERS	
UNDERSURFACE STATION MARK	OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				

The old Maryland-Delaware Boundary Monument number 34 was recovered and found in good condition with the disk for Triangulation Station WHITELEY 1974 in the apex of the monument. The monument was found to be 8 feet to the east of the boundary line. Therefore, it was removed from its position and reset on the computed state line. The triangulation disk was removed and a modern Maryland-Delaware Boundary Disk placed in the apex of the monument.

The mark is located about 1/4 mile southeast of Whiteleysburg, 3 1/4 miles east-southeast of Greensboro and 18 1/2 miles southwest of Dover. It is on property owned by Mr. Marvin Senney and Mr. Senney lives just northeast of the station.

To reach from the intersection of Maryland State Highway 314, Delaware State Highway 12, Delaware County Road 452 and 59 in the small town of Whiteleysburg, go south-southwest on Delaware State Highway 12 for 0.1 mile to the end of truck travel in wet weather. Turn left and go east across a cultivated field for 0.2 mile to the station just west of a wooded area and in the cultivated field.

The mark is a 12-inch limestone post set in a concrete base projecting 18-inches. The Maryland-Delaware Boundary Disk which is set in a drill hole in the apex of the monument is stamped N-S RC, 34 1976. A similar disk was set in an 8-inch mass of concrete 60 inches directly below the surface disk and it is stamped the same as the surface disk. The monument is 174 feet northwest of a witness post, 171 feet north of a field ditch, 101 feet west of a wooded area, and 2 feet west of a witness post.

For additional information, see description for station WHITELEY 1934.

GEODETIC LATITUDE	38 57 10.88330	ELEVATION	19 METERS
GEODETIC LONGITUDE	75 43 58.56417	SCALED	FEET

STATE COORDINATES (FWS)			
STATE & ZONE	CODE	X	Y
MD	1900	1,160,326.53	410,267.23
DE	0700	410,053.18	347,229.25

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # FOR Δ 0. FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION WHITELEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 OATUM

JUL 1977  
U S DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

# DESCRIPTION OF THE NATIONAL YOUTH SERVICE OF COLOMBIA

NAME OF STATION: BOUNDARY MONUMENT 35

CHIEF OF PARTY: R.W. TOMLINSON      YEAR: 1962      STATE: MARYLAND-DEL-      COUNTY: CAROLINE-KENT  
AMIRE:

Description, including sketch of object. Station is located about 1.0 mile north of Whiteleysburg, about 4.0 miles east of Greensboro Maryland, in dense woods land and on the property line between property owned by Mr. Earnest Longfellow and Mr. Hughes.

to reach the station from Greensboro Maryland, go east for 0.4 mile to 3 forks at the junction of State Highways 313 and 314, keep the middle road Highway 314 and go southeasterly for 3-8 miles to a Y-fork in the west edge of Whitesburg, keep the left fork which becomes State Highway 12 and continue easterly for 0.95 mile to a side road left, turn left, go northerly for 0.85 mile on the macadam road to a side road left, turn left, go northwesterly on the macadam road for 0.5 mile to a gate and a farm road on the left, turn left, go south for 0.2 mile to the residence of Mr. Kellor Edwards. Continue south along the west edge of field for 0.1 mile to woods, turn left along the north edge of woods for 0.05 mile to a woods road right, turn right, on woods road for 0.2 mile and station on the right.

Boundary Monument No. 35, a 12 inch square monument with a coat of arms on the east and west side, and projects 30 inches from ground surface. It is 6.0 feet southeast of the center of woods road; 66.0 feet east of a 10 inch hickory tree with a triangle blaze.

A traverse connection was made to triangulation station LONGFELLOW, distance being 26.095 meters and (85.6) feet southeast of station LONGFELLOW.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	35 DEL MD
STATE	DELAWARE - MARYLAND	YEAR 1962

SECOND-ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEOGRAPHIC LATITUDE		G		E		ELEVATION SCALED		18 METERS FEET	
GEOGRAPHIC LONGITUDE		38	58	75	44	03.1548	02.7289		
STATE COORDINATES (Feet)									
STATE & ZONE	CODE	X				Y			
DE	0700	409,742.58				352,518.72			
MD	1900	1,159,924.24				415,550.22			
						- 0 11 59 + 0 47 40			

<sup>a</sup> PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
	0	0	

### POSITION DETERMINED BY TRAVERSE FROM STATION LONGFELLOW

Form 3236  
(11-8-55)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRaverse  
DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 36

CHIEF OF PARTY: R.W. Tomlinson      YEAR: 1962      STATE: Delaware-Mary-  
land      COUNTY: Caroline-Kent  
Description, including sketch of object: Station is located about 2.0 miles north of the small settlement  
of Whiteleysburg, and about 4.0 miles east-southeast of Greensboro Maryland. On the  
property owned by Mr. Hiram Short.  
Boundary Monument No. 36, a 12 X 12 inch square monument, projecting 30 inches  
from ground surface. It is 25.0 feet north of center of field road; 30.0 feet north  
of a north-south fence line.  
A traverse connection was made to triangulation station SHORT, distance being 84.098  
meters and (275.912) feet north-northeast of station SHORT.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 36 DEL MD  
STATE: DELAWARE - MARYLAND      YEAR: 1962      SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 58 55.7533	ELEVATION SCALED	16 meters FEET
GEODETIC LONGITUDE	75 44 06.8963		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	409,432.03 1,159,521.41	357,841.29 420,866.32
			- 0 12 02 + 0 47 38

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  HOR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CORR

POSITION DETERMINED BY TRAVERSE FROM STATION SHORT

## HORIZONTAL CONTROL DATA

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY & NATIONAL GEODETIC SURVEY  
MAY 1977

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MOAA FORM 76-39  
112-704

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NAME OF STATION: BOUNDARY MONUMENT  
 DESCRIPTION OF TRIANGULATION STATION: Kent  
 COUNTY: Delaware  
 NEAREST TOWN: Whittleysburg  
 CHIEF OF PARTY: C. L. Novak  
 YEAR: 1976  
 DESCRIBED BY: R. G. Gentry  
 NATIONAL MONUMENTS SURVEY

DESCRIBED BY: R.G. Pougt

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	37	OEL	MO
STATE	DELAWARE -	MARYLAND	YEAR	1976

SECOND PAGE

**SOURCE** C-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 59	43.20374	ELEVATION
GEODETIC LONGITUDE	75 44	10.67440	NO CHECK

The old boundary monument was found in the prone position about 100 yards north of the computed position. The computed position of this monument was found to be in a cultivated field. A new point was selected to the south and out of any danger of farm operations. The old monument was then reset in the new location.

The station is located 2 1/2 miles north of Whiteleysburg, 3 3/4 miles southeast of Goldsboro, and 4 miles northeast of Greensboro. The station is on road right-of-way.

To reach from the intersection of State Highways 313, 314, and 404 in the east edge of Greensboro, go east on State Highway 314 for 100 feet to a side road left. Turn left and go northwest on a paved road for 1.0 mile to a side road left. Continue straight ahead and go east on road 110 for 3.15 miles to a crossroads and the station on the left.

The surface mark is a 12-inch square limestone monument with a "P" on the east side and an "M" on the west side which is carved in the stone. It has a 1-inch carved cross in the apex of the stone which marks the point intersected. It projects 24 inches above the surface. The sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S No. 37 1976. Set in an 8-inch mass of concrete which is 42 inches below the surface. They are 225 feet west of the center of Holly Springs Road, 201 feet west of the powerline pole, and 3 feet east of a witness post. For additional information, see description for station SCHULTJE 1962.

For additional information, see description for station SCHULTIE 1962.

STATE COORDINATES (Fez)				
STATE & ZONE	CODE	X	Y	$\theta = \tan^{-1} \frac{Y}{X}$ in degrees
MD. OE.	1900	1,159,156.65	425,662.10	+ 0 47 35
	0700	409,150.54	362,642.93	- 0 12 04

PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From north)	CODE
	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	

THESE DATA OBTAINED FROM ADJUSTMENT OF OEC 1976

### POSITION DETERMINED BY TRAVERSE FROM STATION SCHULTIE



JUL 1977

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRaverse

## DESCRIPTION OF TRAVERSE STATION

NAME OF STATION: BOUNDARY MONUMENT 38

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 STATE: Delaware COUNTY: Kent  
Description, including sketch of object: Boundary Monument No. 38, located 2.0 miles southwest of Sandtown, 5.0 miles southwest of Doldisboro, 4 1/2 miles northeast of Greensboro and on property owned by owned by Mr. Carl Sylvester.

The Boundary Monument No. 38 is a 12 X 12 inch limestone monument projecting 28 inches above the ground surface and marked with the letters M and P. The monument is in good condition but is leaning slightly west. Point observed and traversed to was a cross mark scribed on the apex of the monument. It is located in a cultivated field, 56.6 feet west-southwest of a 11-inch cedar tree and 132.0 feet south of a standard metal witness post and marker. A traverse measurement was made to triangulation station SYLVESTER 1961 distance being 39,084 m. 126.228 feet.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 38 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1962 SECOND ORDER

SOURCE C-12731

### NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 00' 40.1039	ELEVATION SCALED	19 METERS FEET
GEODETIC LONGITUDE	75° 44' 15.2063		

STATE COORDINATES (Feet)			
STATE & ZONE	COMP	N	E
DE MD	0700 1900	408,813.02 1,158,719.29	368,400.84 431,412.99

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE BISHOP'S FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (Plane Azimuth)		PLANE AZIMUTH (Plane Azimuth)		CODE
	0	1	2	3	

POSITION DETERMINED BY TRAVERSE FROM STATION SYLVESTER

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 553a  
(11-6-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## TRAVERSE

## DESCRIPTION OF TRIANGULATION/INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT NO 39

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Caroline-Kent  
are

Description, including sketch of object: The station is located about 3.5 miles east-southeast of Goldsboro, Maryland, 1.2 miles west-southwest of the small settlement of Sandtown, Delaware and on property owned by Dr. Charles Cohen. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. The stone leans about 8 degrees to the south, with a deep pit in its south side. The upper edges are badly broken, marked with the letter H on the west and P on the east sides. It is 75.0 feet north of the southeast corner of woods, 62.4 feet east of a standard metal witness post and marker and 26.5 feet south of the centerline of a blacktop road.

A traverse connection was made to triangulation station SANDTOWN, distance being 17.407 meters and (57.11 feet) south-southeast of station SANDTOWN.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 39 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 01 32.3966	ELEVATION SCALED	17 meters FEET
GEODETIC LONGITUDE	75 44 19.3660		

## STATE COORDINATES (feet)

STATE & ZONE	CODE	N	E	PLANE ANGLE *
DE	0700	408,503.39	373,692.52	- 0 12 10
MD	1900	1,158,317.90	436,698.22	+ 0 47 30

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CORP

POSITION DETERMINED BY TRAVERSE FROM STATION SANDTOWN

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

Form 323b  
(11-6-65)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE:

### DESCRIPTION OF TRANSECTION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 40

CHIEF OF PARTY: R. W. Tomlinson      Year: 1961      State: Maryland-Delaware      County: Caroline-Kent

Description, including sketch of object: The station is the center of the small cross inscribed in the top and center of Boundary Monument No. 40. Located in a dense woods area, on property owned by Mr. Frank Shockley who lives in Audubon, New Jersey, 15th South Logan Avenue. It is about 3.0 miles southeast of Henderson, Maryland, 2.5 miles east of Goldsboro, Maryland and about 1.0 mile northwest of the small settlement of Sandtown, Delaware. It is a 12-inch square granite stone projecting about 30 inches above the surface of the ground. It is plumb and in good condition, with the letter H cut in its west side and the letter P in its east side. A small cross was inscribed in its top and center for traverse purpose on this date. It is 76.6 feet south-southeast of a standard metal witness post and marker and 40.5 feet east of the approximate centerline of a dim track woods road, the end of woods road.

A traverse connection was made to triangulation station SHOCKLEY, distance being 21,942 meters and 71,988 feet southeast of station SHOCKLEY.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION

STATE	DELAWARE - MARYLAND	YEAR	1961
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
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56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
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62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

SECOND GRADE A

**SOURCE** G-12731

NO OBSERVATION CHECK ON THIS POSITION

	$\phi$	$\lambda$	$h$	ELEVATION SCALED	14 MONTHS EFFET
GEODETTIC LATITUDE	39	02	24.2382		
GEODETTIC LONGITUDE	75	44	23.5363		

STATE COORDINATES (Fez)					
STATE & ZONE	CODE	N	E	U.M.D. or M.G.L.	+
DE	0700	408,192.90	378,938.58	-	0 12 13
HD	1900	1,157,916.43	441,937.84	+	0 47 27

<sup>6</sup> PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From station)	PLANE AZIMUTH (From meridian)	CODE

# POSITION DETERMINED BY TRAVERSE FROM STATION SHOCKLEY

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

FORM 542b  
(11-8-55)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
Traverse

DESCRIPTION OF ~~TRIANGULATION~~ INTERSECTION STATION  
NAME OF STATION: BOUNDARY MONUMENT 41

CHIEF OF PARTY: R. W. Foulnesson YEAR: 1961 STATE: Delaware-Mary- County: Kent-Caroline  
land  
Description, including sketch of object: The station is the small cross inscribed in the top end center  
of Boundary Monument No. 41. It is a 12 x 12 inch square granite stone projecting  
about 30 inches above the surface of the ground, it is in a good plumb position and  
in good condition. It has the letter M cut in the west side of it and the letter P in  
the east side. It is 480.0 feet south of the approximate center of a gravelled road and  
55.0 feet east of a drainage ditch.  
A traverse connection was made to triangulation station LEE, distance being  
109.169 meters south of station LEE.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 41 DEL. MD.  
STATE: DELAWARE - MARYLAND YEAR: 1961 SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 03 16.6697	ELEVATION	14m TERS
GEODETIC LONGITUDE	75 44 27.7120	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	407,882.34	384,244.34
MD	1900	1,157,513.85	447,237.15
			- 0 12 16
			+ 0 47 25

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta$  FORMULA & NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	COR

POSITION DETERMINED BY TRAVERSE FROM STATION LEE





## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 823a  
(11-8-55)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 43

CHIEF OF PARTY: R. V. Tolunson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Caroline-Kent  
State

Description, including sketch of object: The station is located about 2.0 miles south of Maryland, Delaware, 1.5 miles northeast of Henderson, Maryland and on property owned by Mr. Wm. E. Vaneerde. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground, upright and firmly set and in good condition. It has the letter H cut on the west side and the letter P on the east side. It is 121.0 feet north-northwest of a standard metal witness post and marker and 97.6 feet north-northwest of a 3/4-inch poplar tree.

A traverse connection was made to triangulation station VANEERDE, distance being 29,535 meters and (96.90 feet) northwest of station VANEERDE.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 43 DEL MD

STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 05 02.0298	ELEVATION	8 METERS
GEODETIC LONGITUDE	75 44 36.1114	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODG	X	Y
DE	0700	407,258.04	394,906.23
MD	1900	1,156,704.61	457,886.06
			- 0 12 22 + 0 47 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBSCT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODG

POSITION DETERMINED BY TRAVERSE FROM STATION VANEERDE

Form 523b  
(11-6-55)  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF ~~BOUNDARY MONUMENT~~ STATION  
NAME OF STATION: BOUNDARY MONUMENT 44

CHIEF OF PARTY: R.W. Tomlinson YEAR: 1961 STATE: Delaware COUNTY: Kent  
Maryland  
Description, including sketch of object: Boundary Monument No. 44, located in the west edge of a cultivated field in the east edge of a heavy wooded area, 1.0 mile south of Merydale, 2.0 miles north-east of Henderson and on property owned by Mr. Salvador Shepenis.  
The monument is a 12 x 12 inch limestone monument projecting about 30 inches above the ground surface and marked with the letters M and P and in good condition except small chips on the edges. Point observed to and traversed to was a small cross mark scribed on the apex of the monument.

A traverse measurement was made to triangulation station SCHEPENIS 1961, distance being 26,555 feet 8.0942 meters.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 44 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION, SCALED	18 METERS FEET
39 05 54.2233	75 44 40.2707		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	406,949.12 1,156,304.05	400,187.96 463,161.38

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  OR  $\Delta$   $\alpha$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION SCHEPENIS

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 523a  
(11-5-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF TRANSMULATION/INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 45

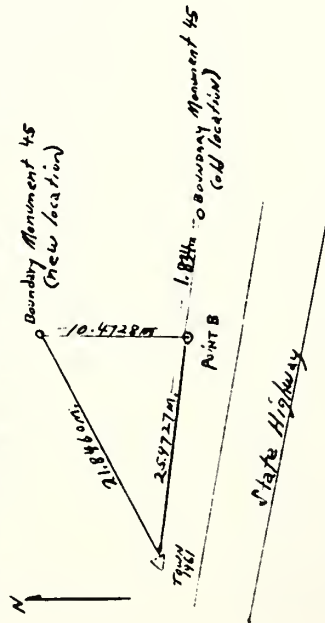
CHIEF OF PARTY: R. J. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Caroline-Kent  
Description, including sketch of object: The station is located in the town of Maryland, about a 100 yards east-northeast of the railroad station and on State owned property. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. It has the coat of arms on the east and west sides. The monument is upright and in good condition. It is 92.6 feet east-southeast of a standard metal witness post and marker.  
A traverse connection was made to triangulation station TOWN, distance being 27.805 meters and (91.224 feet) southeast of station TOWN.

Form 523a  
(11-5-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRANSMULATION STATION  
TRAVERSE

Name of Station: Boundary Monument 45  
Established by: R.L.T. Year: 1961 State: Delaware-Maryland  
Recovered by: J.C.B. Year: 1968 County: Kent-Caroline

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts: Station was recovered as described and found to be in good condition. Upon request of the local oivio club the monument was relocated on the estate line and away from the highway to a position where it could be better protected from damage.  
Monument was moved 1.834 meters on line to station TOWN 1961 and north along the estate line 10.4728 meters.



## ADJUSTED HORIZONTAL CONTROL DATA

(see NOTE below)

NAME OF STATION: BOUNDARY MONUMENT 45 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

SECOND ORDER

GEODETIC LATITUDE	39 06 44.7954	ELEVATION	22 meters
GEODETIC LONGITUDE	75 44 44.2576	SCALED	FEET

STATE & ZONE	CODE	X	Y	P (IN Δ, P, INCHES)
DE	0700	406,653.32	405,305.62	- 0 12 27
MD	1900	1,155,919.47	468,272.90	+ 0 47 14

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE P (IN Δ, P, FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from head)	PLANE AZIMUTH (from head)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION TOWN

## NOTE

Monument moved to new location on boundary. This position is no longer valid. See BOUNDARY MONUMENT 45 RESET, 1968.



FORM 525  
(8-76)

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

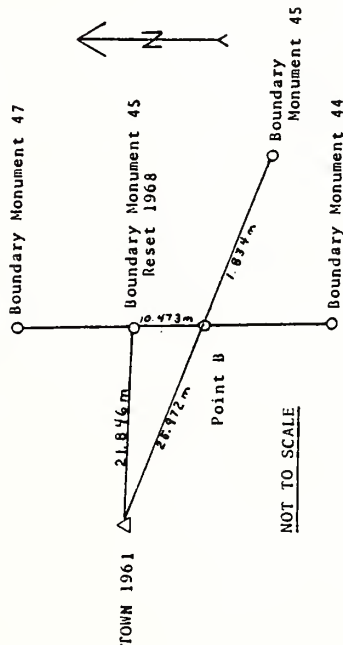
DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 45 RESET  
CHIEF OF PARTY: J.C.B. STATE: DELAWARE-MARYLAND  
YEAR: 1968 COUNTY: KENT-CAROLINE  
DESCRIBED BY: C.F.K.

Boundary Monument No. 45 was recovered as described and found to be in good condition. The 1961 survey showed the Boundary Monument to be approximately 5 feet east of the state boundary. At the request of the Maryland, Delaware Civic Club, the mark was reset on the state line in May 1968, after permission was obtained from officials of Maryland and Delaware.

The monument was moved 1.834 meters on line to station TOWN 1961 and north 10.473 meters along the state line.

Detailed description



ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 45 RESET DEL MD  
STATE DELAWARE - MARYLAND YEAR 1968 SECOND ORDER A

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 06 45.1652	ELEVATION	22 METERS
GEODETIC LONGITUDE	75 44 44.3501	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	406,646.17	405,343.06
MD	1900	1,155,911.67	468,310.20

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  (ORD. M. FORMULA) NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CLUE

POSITION DETERMINED BY TRAVERSE FROM STATION TOWN

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE  
ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

MONUMENT 46.55 43 53

STATE, Md.--Del. COUNTY.

QUADRA NGL E MO. Q390753

YEAR: 1976

NEAREST OWN PARTY  
CHIEF OF PARTY. C.L. Novak

100

NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK, AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		METERS	
	SURFACE-STATION MARK	UNDERGROUND STATION MARK	BEARING	DISTANCE	FEET	DIRECTION

The old boundary monument was found in the prone position about 10 feet north of its computed position. The old monument was reset at this date.

The monument is located 1 mile north of Maryland, and 1 mile east of Keppleville, Maryland. The property is owned by Mr. Mathew R. Taralla.

To reach this area from the post office in Templeville, go easterly on State Highway 302 for 1.1 mile to the Maryland-Delaware State Line. Continue east for 0.25 mile to a graveled road on the right, turn right go southerly on the graveled road for 0.95 mile to Mr. Faralla's house on the right, turn right and go east passing to the right of Mr. Faralla's house for 0.35 mile to the ruine of an old building in the center of a cultivated field, turn left and go southerly across the field for 0.15 mile to an extended timber area and the end of truck travel. Pack southerly through woods for 0.05 mile to the eation.

Boundary Monument number 46 is a 12 by 12 inch square limestone monument with a P on the east side and an M on the west side. The limestone post is set on a 2 x 2 feet square concrete base and set in concrete to where the old monument is projecting 16 inches. It is 22.7 feet east of a witness post, 12.5 feet northwest of a 20-inch pine tree, and 10 feet west of an old fence line. Due to water, there is no subsurface disk at this point.

For additional information, see description for station TARAILA 1961.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	46 DEL MD
STATE	DELAWARE - MARYLAND	YEAR 1976

SOURCE C-10742  
NO OBSERVATION CHECK ON THIS POSITION

GEOGRAPHIC LATITUDE		GEOGRAPHIC LONGITUDE		ELEVATION		21 MILES	
°		'		FOOT		FOOT	
39	07	37	98914	NO CHECK			
75	44	48	56839				

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	U, S, Δ, S, ANGLE *
MD	1900	1,155,505.86	473,649.29	+ 0 47 12
DE	0700	406,333.10	410,688.63	- 0 12 30

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\alpha$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEOGRAPHIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	COORD
	0	0	

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

### POSITION DETERMINED BY TRAVERSE FROM STATION TARAILA

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MARYDEL (Queen Anne Kent, Md., C.D.M., 1932)--Located on Maryland-Delaware Boundary line about 1.2 miles NE of Templeville, Maryland, and 0.1 mile SE of highway leading from Templeville, Maryland, to Hertzly, Delaware, on property owned and occupied by Mr. Fred Maske. Station is marked by a regulation station disk set in the top of sand stone boundary monument 12 inches square and about 2 1/2 or 3 feet above ground. When originally visited, this monument was very unsteady, but owner stated that a survey which had been made showed that stone was in its correct position. Position of stone was held fixed. It was then dug out and underground mark was set. The monument was then set in its original position and reinforced by concrete placed around base. It is now very steady. On one face of stone, there is an "M", and on opposite face is a "P". At one time this part of Delaware was part of Pennsylvania. Station is in open field just SW of Mr. Maske's house 26.2 meters SW of SW corner of house, 15.8 meters WSW of maple tree in front of house.

Underground and reference marks are standard bronze disks set in concrete as described in notes 7e, and 11e.

Reference mark No.1 is SE of station et NW corner of chicken house.

Reference mark No.2 is in fence line on W side of field, SW of station, 6.7 meters S of 12-inch cedar tree in fence line. Reference mark No.3 is WSW of station, 6 meters SE of center line of highway, at NE end of entrance to lane, 1 meter NE of 8-inch leaning cedar tree which is the NE gatepost of gate to lane. From Templeville, Maryland, take paved road to Hertzly 1.2 miles NE to State Line, then right or SE 0.1 mile to Mr. Maske's house and station.

## OBJECT

### DISTANCE

### DIRECTION

R.M.No.1 142.28 feet  
R.M.No.2 332.9 feet  
R.M.No.3 approx. 1/4 mile

Height of signal above station mark - 34 meters.  
Height of telescope above station mark - 31 meters.

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: MARYDEL

ESTABLISHED BY: O.D.M.

RECOVERED BY: O.L. Movel

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN.

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET

## BENCH

STATE: Maryland-Delaware

COUNTY: Md. Queen Anne

Del. Kent

MARK ALSO (X)

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 2 (Renger 111 distance) RM 6	SW ENE	73.24	22.324	0 00 00.00 152 27 29

The station mark and reference mark 2 were recovered and found in good condition. Reference marks 1, 3, 4 and 5 were not found. They were reported destroyed by Maryland Highway Department. A new reference mark 6 was established at this date. There is no place to set a azimuth mark except within 0.15 mile end reference mark 2 is nearly that distance.

A complete new description of the station follows.

The station is located on the Maryland-Delaware line about 10 miles west of Dover Delaware, 1 1/2 miles northeast of Templeville and just south of State Highway 11. The property owner's name is unknown.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION MARYDEL BURY MON 47 DEL MD

STATE DELAWARE - MARYLAND YEAR 1932

FIRST UNDER

SOURCE G-12731

GEODETIC LATITUDE	39 08 30.3858	ELEVATION	20.31 METERS
GEODETIC LONGITUDE	75 44 52.7609	NO CHECK	66.6 FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	PLANE & LENGTH (From origin)	CODE
DE	0700	406,022.05	415,990.98	- 0 12 33	
MD	1900	1,155,102.80	478,945.20	+ 0 47 09	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE PLANE AZIMUTH FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From origin)	CODE
AZ MK RM 3	76 11 34.6	76 24 07	0700
AZ MK RM 3	76 11 34.6	75 24 26	1900

To reach the station from a point where State Highway 11 crosses the Maryland-Delaware line, go west on State Highway 15 for 0.05 mile to a side road left. Turn left and go south on a farm road for 0.15 mile to a farm house and the station just northwest of the house and near a outside fireplace.

The station mark is a standard disk stamped MARYDEL 1932, set in the top of a 12-inch square Maryland-Delaware boundary monument which projects 18-inches. It is 16 feet north of the chimney of the fire place, 35 feet north of the northwest corner of the farm house and 65 feet west of the farm road. (NOTE described)

Reference mark 2 is a standard disk stamped MARYDEL NO 2 1932, set in the top of a 12-inch square concrete monument which projects 6-inches. It is in a fence line across the open cultivated field to the west of the station. It is 3 feet west of the west edge of the cultivated field, 6 feet east of a small ditch and 22 feet south of a 14-inch cedar tree. (NOTE 11a)

Reference mark 6 is a standard disk stamped MARYDEL 1932 NO 6 1973, cemented in a drill hole in a large concrete slab in the center of the farm lane. It is 83 feet northeast of the fireplace chimney and 96 feet northeast of the northwest corner of the farm house. (NOTE described)

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 523b  
(11-6-55)

DESCRIPTION OF ~~TRANGULATION~~ TRANGULATION INTERSECTION STATION  
NAME OF STATION: BOUNDARY MONUMENT 48

CHIEF OF PARTY: R. V. Tomlinson Year: 1961 State: Maryland-Del- County: Queen Anne's  
Description, including sketch of object: The station is located in a dense woods and low swamp area, on property owned by Mr. Sealester, about 2.0 miles southwest of Hartly, Delaware and about 1.5 miles northeast of Templeville, Maryland. It is a 12-inch square monument projecting about 30 inches above the surface of the ground, badly eroded at the bottom, the upper part is in good condition, but slightly out of plumb. It is 87.7 feet southeast of a standard metal witness post and marker, 79.0 feet southwest of a 8-inch triangular blazed oak tree.

A traverse connection was made to triangulation station WONDER, distance being 25.228 meters and (82.70 feet) southwest of station WONDER.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 48 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 09 22.6145	ELEVATION	21 METERS
GEODETIC LONGITUDE	75 44 56.9781	SCALED	FEET

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	N	E	PLANIMETRIC DISTANCE
DE	0700	405,709.13	421,276.36	- 0 12 36
MD	1900	1,154,698.17	484,224.11	+ 0 47 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FORMULA NEGLLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COORD

POSITION DETERMINED BY TRAVERSE FROM STATION WONDER



# HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

By the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 323b  
(11-8-55)

## DESCRIPTION OF TRAVERSE

NAME OF STATION: BOUNDARY MONUMENT 49  
CHIEF OF PARTY: R.W. Tomlinson  
YEAR: 1961  
STATE: Delaware  
COUNTY: Kent  
The station is located in a dense woods and very swampy land, 2.0 miles west of Hartly, Delaware, 2 1/2 miles north-northeast of Templeville, Maryland and on property owned by Mr. Steve Szolostei.  
The Boundary Monument was recovered broken or eroded. The top is in excellent condition. In a prone position. The remaining base is badly eroded. The top is in excellent condition. The point measured to and observed to was a cross mark scribed in the foundation of the monument. The foundation is located 35.0 feet west-northwest of a 12-inch triangular blazed sapling tree and 74.6 feet west of a standard metal witness post and marker.  
A traverse measurement was made to triangulation station SZELESTEI 1961 being 24,629 meters west-northwest of the station

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 49 DEL MD  
STATE: DELAWARE - MARYLAND  
YEAR: 1961  
SECOND ORDER: A

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 10 14.7421	ELEVATION SCALED	22 meters feet
GEODETIC LONGITUDE	75 45 01.1268		

STATE COORDINATES (Part)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	405,401.72 1,154,299.21	426,531.51 489,492.91
			- 0 12 39 + 0 47 04

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  UTM  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From North)	PLANE AZIMUTH (From North)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION SZELESTEI

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 5236  
(11-1-65)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

NAME OF STATION: BOUNDARY MONUMENT 50  
DESCRIPTION OF TRIANGULATION: INTERSECTION STATION  
TRaverse

CHIEF OF PARTY: R. A. Tomlinson  
STATE: Maryland-Delaware  
COUNTY: Queen Anne's  
Kent  
Description, including sketch of object: The station is located in a dense low swampy woods land, on property of Mrs. Martha G. Wamsley, about 6.0 miles east of Sudlersville, Maryland, 3.5 miles north-northeast of Templeville, Maryland and 2.5 miles northwest of Hartly, Delaware. It is a 12-inch square stone projecting about 24 inches above the surface of the ground with the Coat of Arms inscribed on the east and west sides. The monument has been previously broken off about 10 inches above the surface of the ground and is presently just sitting in its original place. The upper part is in good condition, a small cross was etched in its top and center for traverse connection and intersection purpose. It is 76.3 feet southeast of a standard metal witness post and marker and 66.5 feet southeast of an 18-inch triangular blazed tree.  
A traverse connection was made to triangulation station WALMSLEY, distance being 24,170 meters and 79,30 feet southeast of station WALMSLEY.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 50 DEL MD  
STATE: DELAWARE - MARYLAND  
YEAR: 1961  
SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 11 06.6843	ELEVATION	21 meters
GEODETIC LONGITUDE	75 45 05.3041	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	405,092.12	431,807.93
MD	1900	1,153,898.39	494,742.94

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \sin \Delta$  &  $\rho \cos \Delta$  FORMULA SELECTING THE SECOND TERM.

TOSTATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION WALMSLEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 502b  
(11-6-63)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## TRAVERSE

### DESCRIPTION OF TRAVERSE

NAME OF STATION: BOUNDARY MONUMENT 51

CHIEF OF PARTY: R. V. Tomlinson YEAR: 1961 STATE: Delaware COUNTRY: Queen Annes

Description, including sketch, if object: BOUNDARY MONUMENT NO. 51 is located in a north and south property fence line, 5.0 miles northwest of Hartly, Delaware, 5.0 miles west-southwest of Kenton, Delaware, 6.0 miles east of Sudlersville and on property owned by Mrs. Earnest Ford.

BOUNDARY MONUMENT NO. 51 is a 12 X 12 inch limestone monument with the letters M and P on the east and west sides and projects about 20 inches above the ground surface. The monument is firmly set and is in excellent condition except the corners are slightly chipped. It is located 1.5 feet west of a north and south fence line, 5.0 feet north of a large lone wild cherry tree and 97.0 feet north of a field entrance.

The point observed and measured to was a cross mark scribed in the apex of the monument. A traverse connection was made to triangulation station FORD 1961, distance being 25,783 meters 84.59 feet

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 51 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 11 58.9319	ELEVATION	18 METERS
GEODETIC LONGITUDE	75 45 09.4815	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	404,782.77 1,153,497.27	437,095.26 500,023.89

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta$  OF FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From station)	PLANE AZIMUTH (From station)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION FORD

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

By the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE

## DESCRIPTION OF TRAVERSE AND INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 52

CHIEF OF PARTY: R. J. Tomlinson YEAR: 1961 STATE: Maryland-Del- County: Queen Anne's  
Kent  
Description, including sketch of object: The station is located in a dense wooded area and on property owned by Mr. R. Dunning, about 5.0 miles southeast of Millington, Maryland and about 12 miles west of Kenton, Delaware. It is a 12-inch square stone monument projecting about 12 inches above the surface of the ground with the letter M inscribed on the west side and P on the east side. The monument was found lying in a prone position. It was plumbbed and intersected with a small cross etched in its top and center. A traverse connection was made to triangulation station DUNNING, distance being 6,100 meters and (216.803) feet west-southwest of station DUNNING.

\* Traversed with non-standardized tapes as monument had fallen over since observations were made at which time the monument was in a prone position also.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 52 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961

SECOND UNDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 12 51.0228	ELEVATION	12 METERS
GEODETIC LONGITUDE	75 45 13.6189	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	406,476.65	442,366.75
MD	1900	1,153,099.65	505,289.06
			- 0 12 47
			+ 0 46 56

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta$   $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION DUNNING





## HORIZONTAL CONTROL DATA

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

By the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 5436  
(11-3-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 54

CHIEF OF PARTY: R.W. Toelinson YEAR: 1961 STATE: Maryland COUNTY: Kent

Description, including sketch of object: The station is located in a north and south fence line in a cultivated field, 4 1/2 miles east-southeast of Millington, Maryland, 6.0 miles northwest of Kenton, Delaware and on property owned by Mr. George Moffett. It is a 12 X 12 inch granite stone marked M and P and projects about 30 inches above the ground surface. It is leaning slightly south and has several bullet marks on the sides and is chipped slightly on the corners. The monument is considered in good condition. It is about 125 yards north-northeast of triangulation MOFFETT.

A traverse connection was made to triangulation station MOFFETT, distance being 119.555 meters (391.58) feet north-northeast of station MOFFETT.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 54 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS STATION

GEODETIC LATITUDE	39 14 35.6419	ELEVATION	14 METERS
GEODETIC LONGITUDE	75 45 22.0680	SCALED	FEET

STATE COORDINATE (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	403,851.29	452,954.07
MD	1900	1,152,290.49	515,863.53
			- 0 12 53
			+ 0 46 51

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B \sin \Delta$  OF FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
	0	0	

POSITION DETERMINED BY TRAVERSE FROM STATION MOFFETT

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-8-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

NAME OF STATION: **BOUNDARY MONUMENT 55**  
DESCRIPTION OF ~~TRANGULATION~~ <sup>TRAVERSE</sup> ~~STATION~~

CHIEF OF PARTY: **R. W. Tomlinson** YEAR: **1961** STATE: **Maryland-Del.** COUNTY: **Kent-Kent**

Description, including sketch of object: The station is located in a cultivated field along the south side of State Highway 6 about 5.5 miles northwest of Kenton, Delaware and 4.5 miles east of Millington, Maryland. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. It has the letter P cut in the east side and the letter M on the west side. The monument is sitting plumb and in good condition. A small cross was inscribed in its top and center for traverse purpose. It is 96.0 feet southwest of a standard metal witness post and marker, 96.0 feet south of the centerline of State Highway 6 and 67.0 feet south of the Delaware and Maryland metal sign.  
A traverse connection was made to triangulation station KENT, distance being 30.273 meters and (99.32 feet) southwest of station KENT.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION **BOUNDARY MONUMENT 55 DEL MD**  
STATE **DELAWARE - MARYLAND** YEAR **1961** SECOND **ORIGIN A**

SOURCE **G-12731**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 15 27.6309	ELEVATION SCALED	20 METERS FEET
GEODETIC LONGITUDE	75 45 26.2520		

STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE MD	0700 1900	403,541.89 1,151,889.74	458,215.32 521,118.43
			- 0 12 56 + 0 46 48

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COORD

POSITION DETERMINED BY TRAVERSE FROM STATION KENT

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

Form 3236  
(11-6-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ <sup>TRAVERSE</sup> STATION  
NAME OF STATION: BOUNDARY MONUMENT 56

CHIEF OF PARTY: R. V. Toolinsson Year: 1961 State: Maryland County: Kent

Description, including sketch of object: The station is located in a heavy wooded area,  $\frac{1}{2}$  mile east-northeast of Millington, Maryland, 6.0 miles northwest of Kenton, Delaware and is on property owned by Mr. John T. Robinson. The monument is a 12 X 12 inch granite stone marked M and P and projects about 24 inches above the ground surface. The monument is leaning slightly east and the top corners are chipped off. Other than the chipped corners the monument is considered in good condition. It is 1.0 foot east of a north and south fence line, 10.0 feet north of the largest tree in the area. The point intersected and traverse to was a small cross etched on the apex and center of the monument.

A traverse connection was made to triangulation station ROBINSON, distance being 115.460 meters (378.81) feet north-northwest of station ROBINSON.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 56 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 16 20.0143	ELEVATION SCALED	180.175
GEODETIC LONGITUDE	75 45 30.4668		

STATE COORDINATE (NAD83)			
STATE & ZONE	CODE	X	Y
DE	0700	403,230.36	463,516.49
MD	1900	1,151,486.16	526,413.21
			- 0 12 59 + 0 46 45

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin^{-1}$  FORMULA, NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From MD83)	PLANE AZIMUTH (From MD83)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION ROBINSON



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 3236  
(11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## DESCRIPTION OF TRAVERSE INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 57

CHIEF OF PARTY: R.M. Tomlinson YEAR: 1961 STATE: Maryland COUNTY: Kent

Description, including sketch of object: The station is located in a heavy wooded area, 4 1/2 miles east-southeast of Millington, Maryland, 6.0 miles east-northeast of Kenton, Delaware and on property owned by the Millington Wildlife Demonstration Area. The monument is a 12 X 12 inch granite marked P and M and projects about 25 inches above the ground surface. The monument was recovered in good condition. It is leaning slightly east. It is 1.0 foot southeast of a yellow steel post, 43.6 feet south-southwest of a 10-inch triangular blazed white oak tree and 48.3 feet south of a standard metal witness post and marker. A traverse connection was made to triangulation station DEMON, distance being 15.1040 meters 48.459 feet south of station DEMON.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 57 DEL MO SECOND UNDER #  
STATE DELAWARE - MARYLAND YEAR 1961

SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 17' 12.1894	ELEVATION	21 METERS
GEODETIC LONGITUDE	75° 45' 34.6278	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE MO	0700 1900	402,923.12 1,151,087.24	468,796.60 531,687.02

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 108-1. FORMULA NEGLECTING THE SECOND TERM

TOTAL STATION OR OBJECT	GEODETIC AZIMUTH (From station)	PLANE AZIMUTH (From station)	CODE
	0	0	

POSITION DETERMINED BY TRAVERSE FROM STATION DEMON

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE  
DESCRIPTION OF ~~TRANSVERSE~~ INTERSECTION STATION  
NAME OF STATION: BOUNDARY MONUMENT 58

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Kent-New Castle  
Description, including sketch of object: The station is located about 3.5 miles east of Hasey, Maryland, 2.5 miles south of Colte, Maryland and on property owned by Mr. J. E. Bennett. It is a 12-inch limestone square monument projecting about 4 inches above the surface of the ground, setting plumb and in good condition. It is 30.0 feet north of the centerline of an east and west blacktop road, 25.0 feet west of a powerline pole, 21.0 feet west of a standard metal witness post and marker and 2.0 feet south of an east and west fence line.  
A traverse connection was made to triangulation station BENNETT, distance being 7.917 meters and (25.97 feet) west-northwest of station BENNETT.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 58 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION SCALED	20 METERS FEET
39 18 04.5775	75 45 38.8252		

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	402,613.25	474,098.28
MD	1900	1,150,685.29	536,982.36
			- 0 13 05 + 0 46 40

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION BENNETT

### ADJUSTED HORIZONTAL CONTROL DATA

### POSITION DETERMINED BY TRAVERSE FROM STATION QUILLEN

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY  
DESCRIPTION OF TRIANGULATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 60 Maryland Kent  
NEAREST TOWN: Sassafras Delaware COUNTY: New Castle  
CHIEF OF PARTY: C.L. Novak QUADRANGLE NO.: Q390753 DESCRIBED BY: R.G. Pouet  
YEAR: 1976

NOAA FORM 78-39  
11-7-70

NOTE. *	HEIGHT OF TELESCOPE ABOVE STATION MARK      METERS1. HEIGHT OF LIGHT ABOVE STATION MARK      METERS									
	SURFACE-STATION MARK.		DISTANCES AND DIRECTIONS TO 2. INMITH MARK. REFERENCE MARK AND PROMINENT		UNDERGROUND-STATION MARK.		OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION.		METERS	
	OBJECT		BEARING		DISTANCE		FEET		DIRECTION	

The old Maryland-Delaware Monument number 60 was recovered in the prone position at this date. It was reset at the computed position of the boundary. There was no evidence to indicate the original location of the monument.

It is located 18 airline miles northwest of Dover, 3 miles southeast of Sassafras, and 3 miles northeast of Massey.

To reach from the old railroad station in Golts, go southeast on a paved road for 0.8 mile to a point where the road curves to the east and the marker on the left.

The surface mark is a 12-inch square limestone monument which is set in a concrete monument which projects one foot. A small cutrooa in the top and center of the monument marks the point intersected. The old coat of arms are nearly worn away by the weather of the past years.

The sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S No. 60 1976, set in an 8-inch mass of concrete 36-inches below the surface of the ground. They are 62 feet northeast of the center of the paved road, 20 feet south of an 8-inch tree, 5.7 feet southwest of a witness post, and 2.09 feet west of station WHARTON 1934.

For additional information, see description for station WHARTON 1934.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 60 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976

SECOND ORDER

SOURCE C-10742  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	25 METERS
39 19 51.61581	75 45 47.47959	NO CHECK	

STATE COORDINATES (FEET)				
STATE & ZONE	COLOR	X	Y	# OF Δ A. ANGLES *
MD	1900	1,149,858.31	547,801.70	+ 0 46 35
DE	0700	401,974.41	484,930.64	- 0 13 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 100 Δ U. FORMULA INCLUDING THE SECOND TERM

TOSTATION ON OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	COLOR

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION WHARTON



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

1044 FORM 74-39  
12-70

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

NAME OF STATION: **BOUNDARY MONUMENT 61**  
STATE: **Delaware**  
COUNTY: **New Castle**  
NEAREST TOWN: **Golts**  
CHIEF OF PARTY: **C.L. Novak**  
QUADRANGLE NO.: **Q390753**  
YEAR: **1976**  
DESCRIPTION OF TRIANGULATION STATION: **OSCEBEO BY R.G. POUSET**

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS		FEET		DIRECTION	
SURFACE STATION MARK		DISTANCE		BEARING		OBJECT	
UNDERGROUND STATION MARK		DISTANCE		BEARING		OBJECT	

A search was made for the old Maryland-Delaware Boundary Monument and no evidence of it was found. It is believed the old stone was destroyed or buried during the construction of the railroad which is very near the location where the old monument was located. The computed position of the boundary was marked at this date.

The marker is located about 8 1/2 miles northwest of Smyrna, 1 1/2 miles southwest of Vandyke, and 1 mile northeast of Golts. It is on the boundary line of four properties, one of which is Mr. William F. Smith, Box 78, New Castle, Delaware. Another property owner is Mr. Erwin Brown.

To reach from the general store in Golts, go north on Main Street for 0.1 mile to a T-intersection. Turn right, go on a paved road for 0.75 mile to a side road right. Turn right, go east for 0.65 mile to a side road right just before a railroad crossing. Turn right, go southwest on a dirt road for 0.15 to the railroad and end of truck travel. Pack southwest along railroad for about 0.2 mile to the marker on the right.

The surface and sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S No. 61 1976. The surface disk is set in a 10-inch round monument projecting 6-inches. The sub-surface is set in an 8-inch mass of concrete 36 inches below the surface. They are 26 feet north-west of northwest rail of railroad tracks, 11 feet east of an 18-inch poplar tree, and 2 feet south of a witness post.

For additional information, see description for triangulation station GOLTS 1961.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 61 DEL MD**  
STATE: **DELAWARE - MARYLAND** YEAR: **1976**

SECOND PAGE

SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	21 METER
39 20 40.91773	75 45 51.45531	NO CHECK	FEET

STATE COORDINATES (FEET)			
STATE & ZONE	CODE	X	Y
MD	1900	1,149,478.42	552,785.15
DE	0700	401,681.18	489,920.06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  USE  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
	0	0	

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION GOLTS

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 542b  
(11-4-69)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TINNOR

DESCRIPTION OF ~~TRIANGULATION~~ STATION

NAME OF STATION: Boundary Monument 62

CHIEF OF PARTY: R.W. Toblinson

Delaware

YEAR: 1961

STATE: Maryland

COUNTY: New Castle-Kent

Description, including sketch of object: Station is a 12 x 12 inch square granite stone which projects about 24 inches above the ground and is leaning to the south at a 65° angle. The approximate center of the monument was observed and taped to. It is 86.0 feet east-southeast of a 16-inch triangular blazed white oak tree, 85.5 feet east of a 8-inch triangular blazed white oak tree and 65.6 feet east of a 8-inch white oak tree with a standard metal witness marker attached to it. A traverse was made to triangulation station HERRINGS distance being (82.84) feet and 25.250 meters

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 62 DEL MD

STATE: DELAWARE - MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	39	21	33.4238	ELEVATION SCALED	20 METERS FEET
		75	45	55.6914		

## STATE COORDINATES (FATH)

STATE & ZONE	CODE	A	Y	# OF Δ & ANGLE
DE	0700	401,368.89	495,233.76	- 0 13 16
MD	1900	1,149,073.81	558,092.50	+ 0 46 29

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION HERRINGS

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 525b  
(11-6-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## TRAVERSE

### DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 63

CHIEF OF PARTY: R. W. Tomlinson    YEAR: 1961    STATE: Maryland-Delaware    COUNTY: Cecil-New Castle  
Description, including sketch of object: The station is located about 4.0 miles west-southwest of Townsend, 2.0 miles east of Sassafraz, 177.0 feet north of the northeast fence corner, 176.6 feet north of a standard metal witness post and marker, 102.6 feet north-northwest of a twin-trunk oak tree, 17.6 feet west of the approximate centerline of a macadam road and on property owned by Mr. Charles Rausch. It is a 11-inch square limestone monument with the letter M on the west side and P on the east side projecting about 2 1/4 inches above the surface of the ground. The upper corners of the stone are chipped but in general good condition.  
A traverse connection was made to triangulation station COLDWELL, distance being 29,908 meters and (98,122 feet) north of station COLDWELL.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION    BOUNDARY MONUMENT 63 DEL MD (see NOTE below)

STATE    DELAWARE - MARYLAND    YEAR    1961

SECOND ORDER

SOURCE    G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 22 25.6141	ELEVATION SCALED	20 METERS FEET
GEODETIC LONGITUDE	75 45 59.8383		

STATE COORDINATE (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	401,063.61	500,515.50
MD	1900	1,148,676.77	563,368.03
			- 0 13 19 + 0 46 27

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi = \Delta \text{OR } \Delta \text{N}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION COLDWELL

### NOTE

Monument moved to new location on boundary.  
This position is no longer valid. See  
BOUNDARY MONUMENT 63, 1976.

## HORIZONTAL CONTROL DATA

MAY 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION New Castle  
STATE Delaware COUNTY Cecil

NAME OF STATION Boundary Monument 63 DEL MD  
NEAREST TOWN Sassafras  
CHIEF OF PARTY C. L. Novak  
QUADRANGLE NO. Q390753  
YEAR 1976 DESCRIBED BY: R. G. Poust

NOAA FORM 74-39  
11-76

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 63 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976

SECOND ORDER

SOURCE G-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 22 25.61041	ELEVATION	21 METERS
GEODETIC LONGITUDE	75 45 59.91103	NO CHECK	

STATE COORDINATES (NAD 83)			
STATE & ZONE	CODS	X	Y
MD DE	1900 0700	1,148,671.07 401,057.90	563,367.58 500,515.15
			+ 0 46 27 - 0 13 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \Delta \alpha \sin \delta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT		GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

POSITION DETERMINED BY TRAVERSE FROM STATION COLDWELL

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCE AND DIRECTION FROM STATION MARK TO OBJECT	METERS		METERS
			BEARING	DISTANCE	

The old monument was recovered and found in a good upright position. The traverse distance to Triangulation Station COLDWELL was checked. The old monument was 5.7 feet east of the boundary line and it was reset on the true boundary line at this date.

The station is located about 2 airline miles east of Sassafras, 4 miles west-southwest of Towson, and on property owned by Mr. Barri Bution, Rt. 2, Towson, Delaware.

To reach from the main crossroads in Sassafras, go east on Coldwell Road for 2.2 miles to a side road left about 50 feet before reaching a crossroads. Turn left and go north on State Line Road for 0.5 mile to the monument on the left.

The surface mark is a 12-inch square limestone monument with a "D" carved on the east side and an "M" carved on the west side. It is set in a large concrete base and it projects 2 feet. A 1-inch cross on the apex of the stone marks the point intersected. The sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S NO. 63 1976, set in an 8-inch mass of concrete which is 38-inches below the surface. They are 100 yards north of a large lone tree on the west side of State Line Road, 97.5 feet southwest of a powerline pole numbered J89113, 42.6 feet northwest of a witness post, and 24 feet west of the center of State Line Road.

For additional information, see description for station COLDWELL 1961.



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BOUNDARY MONUMENT 64** STATE: **Maryland** COUNTY: **Cecil**  
NEAREST TOWN: **Townsend** QUADRANGLE NO.: **Q390753** DESCRIBED BY: **R.G. Poult**  
CHIEF OF PARTY: **C.L. Novak** YEAR: **1976**

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK. SURFACE-STATION MARK. UNDERGROUND-STATION MARK.	DISTANCES AND DIRECTIONS TO ADJUTMENT MARKS. OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION.		METERS. † HEIGHT OF LIGHT ABOVE STATION MARK. METERS.	
	OBJECT	BEARING	FEET	DIRECTION

A search was made for the old Maryland-Delaware Boundary Monument and no evidence of it was found. It was reported that the old monument was removed from the old wooded fence line and buried under rubbish on the east side of the road. A new Maryland-Delaware marker was established to the south of triangulation station TOWNSEND and out of the cultivated field where the computed position was found to be.

The marker is located about 10 miles northwest of Dover, 5 miles southwest of Middletown, and 4 miles west of Townsend. The property is owned by Mr. C. M. Canton, Route 896, Towson, Maryland.

To reach from the main intersection in the small village of Sassafras, go east on Coldwell Road for 2.2 miles to a side road left about 50 feet before reaching a crossroads. Turn left and go north on State Line Road for 1.4 miles to a farm road left and the marker in the northwest angle of the intersection.

The surface mark is a Maryland-Delaware Boundary Disk stamped N-S NC. 64 1976, set in the top of a 12-inch round concrete monument which is flush with the surface. The sub-surface marker is a similar disk set in the top of an 8-inch mass of concrete which is 40 inches below the surface. They are 25 feet west of the center of State Line Road, 25 feet north of the center of the farm road, 3.5 feet north of a telephone cable marker pole numbered WH 72-100, and 1.7 feet north of a witness post.

For additional information, see description for Triangulation Station TOWNSEND 1961.

NAME OF STATION: **BOUNDARY MONUMENT 64 DEL MD**  
STATE: **DELAWARE - MARYLAND** YEAR: **1976**  
SOURCE: **G-10742**  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 23 11.18724	ELEVATION	NO CHECK	17 METERS
GEODETIC LONGITUDE	75 46 03.59480			FEET

STATE COORDINATES (FEET)				
STATE & ZONE	CODE	X	Y	P' OR Δ, P' ANGLE *
MD	1900	1,148,319.56	567,974.57	+ 0 46 24
DE	0700	400,786.53	505,127.64	- 0 13 22

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \tan^{-1} \frac{Y}{X}$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From station)	PLANE AZIMUTH (From station)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION TOWNSEND

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 523b  
(11-8-65)

TRAVERSE

## DESCRIPTION OF TRIANGULATION/INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 65

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-Castle  
Description, including sketch of object: The station is located about 4.0 miles west-northwest of Townsend, 2.0 miles north of Sassafras, 1.5 miles south-southeast of Warwick, 116.8 feet south-southwest of a standard metal witness post and marker, 96.0 feet south-southwest of a T-intersection of a fence line, 83.0 feet south-southwest of an east and west fence line and on property owned by Mr. Gye Lockerman. It is a 11-inch square limestone monument bearing the Coat of Arms on the east and west sides and projects about 18 inches above the surface of the ground.  
A traverse connection was made to triangulation station LOCKERMAN, distance being 30.447 meters and (99.89 feet) southeast of station LOCKERMAN.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 65 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961 SECOND: (NONE)

SOURCE: C-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 24 09.8563	ELEVATION SCALED	17 METERS
GEODETIC LONGITUDE	75 46 08.3442		FEET

## STATE COORDINATES (feet)

STATE & ZONE	COORD	N	E	PLANETARY ANGLE
DE	0700	400,436.79	511,065.10	- 0 13 25
MD	1900	1,147,866.64	573,904.97	+ 0 46 22

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FOLLOWING FORMULA:  $\theta = \arctan \frac{E}{N}$  (from north)

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION LOCKERMAN

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
MONTHLY AMERICAN 1927 DATUM

LAWRENCE (Ceall County, Md., J.B., Jr., 1934).--This is a second-order station located 8 miles SE of Chesapeake City, Maryland, 0.25 mile E of Werwick, on the property of Mr. Lawrence. Station is located in the top of a state boundary monument, 125 yards NE of the dirt road leading E from Werwick, 33 feet S of the fence corner and 1 foot E of the fence that parallels the state line. The monument is 1 foot square and projects 2.5 feet above the ground.

Underground and reference marks are standard bronze disk set in concrete, as described in notes 7a and 11a.

Reference mark No. 1 is located 113.08 feet S of the station, 1 foot E of the boundary fence. Mark projects 3 inches.

Reference mark No. 2 is located 201.00 feet E of the station, 1 foot N of the garden fence corner and 1 foot E of the fence, 50 paces N of the road. Mark projects 4 inches.

Azimuth mark is located 0.25 mile W of the station, 8 paces E of the center line of the paved road, 20 paces S of a power line pole, 8 paces S of the pasture fence; projects 4 inches.

A 64-foot tower will clear all lines; no cut-ins visible from the ground.

To reach the station from Werwick, Maryland, leave the paved road at the N edge of the village at R.D. Aiken's store and filling station. Turn right on dirt road and go 0.25 mile to a small white house on the N side of the road. Turn left just E of house and go 125 yards to the fence and the station, on the state boundary line. This is a second-order station.

## OBJECT DISTANCE

WHARTON 2 0° 00' 00" D

R.M. 2 201.00 feet

Azimuth mark No. 3 V.G. 0.25 mile

R.M. 1 113.08 feet

Height of light above station mark - 27 meters.

Height of telescope above station mark - 25 meters.

(R.L.B., 1943).--Recovered as described by J.B., Jr., in 1934 except that reference mark 2 is SW of the station, 1 foot S of garden fence corner, 1 foot W of fence, and 50 paces NE of the road.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: LAWRENCE (BOUNDARY MONUMENT - 66)

ESTABLISHED BY: J. B. Jr., YEAR: 1934 STATE: DELAWARE - MARYLAND

RECOVERED BY: R. M. Tomlinson YEAR: 1961 COUNTY: Cecil - New Castle

HEIGHT OF TELESCOPE ABOVE STATION MARK METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK, AND MONUMENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	FEET	DISTANCE	DIRECTION
WHARTON 1934	SW	201.02	61.274	0° 00' 00" 0"
Reference mark 2	W	Approx. 0.15 mile	94.38	40° 41' 21.5"
Azimuth mark	S	113.07	34.465	74° 38' 46.5"
Reference mark 1				353° 25' 51.3"

The station mark, reference marks 1 and 2 and the azimuth mark (reference mark 3) were recovered as described and found in good condition. The distance to reference marks 1 and 2 checked with the previous data. The direction to reference mark 2 checked with the previous data. A difference of 1 minute and 45.7 seconds was noted to reference mark 1 was noted on this date. The azimuth mark (reference mark 3) being obstructed by a building was no more useable. The mark was destroyed on this date and a new azimuth mark was established.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LAWRENCE BORY MON 66 DEL MD

STATE: DELAWARE - MARYLAND YEAR: 1934

SECOND ORDER

SOURCE: C-12731

GEODETIC LATITUDE	39° 25' 02.1562	ELEVATION	22.4 meters
GEODETIC LONGITUDE	75° 46' 12.3065		73 feet

## STATE COORDINATES (feet)

STATE & ZONE	COORD	X	Y	PLANE AZIMUTH
DE	0700	400,130.78	516,357.99	- 0 13 28
MD	1900	1,147,468.65	579,191.66	+ 0 46 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \arctan \frac{Y}{X}$  FORMULA SELECTING THE SECOND TERM.

TORATION OR OBJECT	GEODETIC AZIMUTH (true north)	PLANE AZIMUTH (true north)	COORD
AZ MK 1961	91 03 39.4	91 17 07	0700
AZ MK 1961	91 03 39.4	90 17 21	1900
AZ MK RM 3 1934	134 34 44.9	134 48 13	0700
AZ MK RM 3 1934	134 34 44.9	133 48 26	1900

To reach the azimuth mark from the station, go south on the track timber road for 0.15 mile to the blacktop road. Turn right and go west on the blacktop road for 0.14 mile to a 36-inch maple tree, a standard metal witness post and marker and the mark on the left southwest side of the blacktop road.

The azimuth mark, a standard disk stamped LAWRENCE 1934, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 14.9 feet southeast of the centerline of a blacktop road, 10.6 feet southeast of a 36-inch maple tree and 1.6 feet northeast of a standard metal witness post and marker. Note 16 a.

The station is located about 8.0 miles southeast of Chesapeake City, Maryland and 0.25 mile east of Werwick, Maryland and on property owned by Mr. Lawrence. It is about 125 yards northeast of a blacktop road, 31.0 feet south of a fence corner and 1.0 foot east of a fence line that parallels the State line. The station is in an upright position and in good condition. Triangulation disk of the U. S. Coast and Geodetic Survey is in the top end center of the stone. Marked with M and P. The stem of the P is broken perhaps in an attempt to convert P to D. It is a 12 X 12 inch stone projecting about 30 inches above the surface of the ground.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE  
DESCRIPTION OF TRIANGULATION INTERSECTION STATION  
NAME OF STATION: BOUNDARY MONUMENT 67

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-New Castle  
Description, including sketch of object: The station is located about 3.0 miles west-southwest of Middletown, 1.0 mile north of Warwick, in a grassy area and on property owned by Mr. Horace Powell. It is a 11-inch square limestone monument with the letter M on the west side and P on the east side projecting about 20 inches above the surface of the ground. The edges are slightly chipped but in general good condition and it leans to the south-southeast. It is 116.6 feet north of a standard metal witness post and marker, 116.0 feet north of an east and west fence line and 163.0 feet northwest of a lone elm tree.

A traverse connection was made to triangulation station WARWICK, distance being 19.773 meters and (68.389 feet) north of station WARWICK.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 67 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 25 54.4106	ELEVATION SCALED	21 METERS FEET
GEODETIC LONGITUDE	75 46 16.7556		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	# COR. Δ, Δ, Δ, Δ, Δ
DE	0700	399,818.09	521,646.32	- 0 13 31
MD	1900	1,147,064.05	584,473.70	+ 0 46 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # COR. Δ, Δ, Δ, Δ, Δ FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	UNODIETIC AZIMUTH (From station)	PLANE AZIMUTH (From station)	COMP

POSITION DETERMINED BY TRAVERSE FROM STATION WARWICK



FORM 522b  
(11-8-58)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
DESCRIPTION OF ~~TRIANGULATION~~ TRaverse STATION  
NAME OF STATION: Boundary Monument 68

CHIEF OF PARTY: R.W. Tomlinson YEAR: 1961 STATE: Maryland COUNTY: New Castle-Cecil  
Description, including sketch of object: Station is a Mason-Dixon State Line Monument, located in the  
fence line north of the station. It projects about 30 inches above the surface of the  
ground. A small cross was etched at the approximate center of the monument to hold  
the center point to measure to end turn angles to. A traverse tie was made between  
station LEVELS and the Boundary Monument. A traverse was made to triangulation station  
LEVELS with 50 meter tape, distance being 92.976 feet and 28.339 meters.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 68 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 26 46.7865	ELEVATION SCALED	14 meters FEET
GEODETIC LONGITUDE	75 46 21.0202		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\theta$ (UM $\Delta$ ) $\theta$ ANGLE *
DE MD	0700 1900	399,504.37 1,146,658.20	526,946.97 589,768.04	- 0 13 34 + 0 46 14

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (UM  $\Delta$ )  $\theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From object)	PLANE AZIMUTH (From object)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION LEVELS

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1922 DATUM

FORM 523b  
(11-6-55)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF TRANSSECTION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 69

CHIEF OF PARTY: R. J. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 3.0 miles north of Warwick, Maryland, 3.0 miles northwest of Middletown, Delaware, 47.0 feet north of the centerline of a woods road and 25.0 feet east of an 18-inch triangular blazed pine tree.

A traverse connection was made to triangulation station CARTER, distance being 49,037 feet and 14,962 meters south-southeast of station CARTER. The monument is a 12-inch square stone monument with the letter M and P inscribed on the west and east side, projecting about 30 inches above the surface of the ground and leans slightly to the southwest.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 69 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 27' 38.9538"	ELEVATION	6 METERS
GEODETIC LONGITUDE	75° 46' 25.2272"	SCALED	FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	# COR. BY ANGLE *
DE	0700	399,195.23	532,226.51	- 0 13 37
MD	1900	1,146,257.29	595,041.38	+ 0 46 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # COR. BY FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from back)	PLANE AZIMUTH (from back)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION CARTER

JUL 1977

# HORIZONTAL CONTROL DATA

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 322b  
(11-6-65)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE ~~XXXXXXXXXX~~

## DESCRIPTION OF TRAVERSE INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 70

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-DeL- County: Cecil-New Castle

Description, including sketch of object: Located about 4.0 miles southeast of Chestpeak City, Maryland and 3.5 miles northwest of Middletown, Delaware. It is 13.8 feet west of a north and south fence line, 13.0 feet south-southwest of the center of a gate and field entrance and 12.0 feet south of the south gate post of field entrance.

A traverse connection was made to triangulation station BOHEMIA, distance being 86.538 feet and 26.377 meters east of station BOHEMIA. The monument is a 12-inch square stone monument with an unrecognizable coat of arms on the east and west side. Fused by concrete to the north side of the monument is an 18-inch long, 3-inch wide and 16-inch deep pyramidal shaped concrete monument bearing a brass, rectangular, plate inscribed with Indian tribal information, Choctaw and Lenape tribes, placed by Cecil Historical Society. The monument projects about 17 inches above the surface of the ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 70 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION  
ELEVATION SCALED 15 METERS  
FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	398,885.90	537,518.05
MD	1900	1,145,855.97	600,326.72

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\frac{P}{100} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION BOHEMIA

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 322a  
(11-8-55)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
GEODETIC TRAVERSE  
DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 71  
DESCRIPTION OF TRIANGULATION STATION

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located in the middle of a cultivated field about 3.0 miles east of Chesapeake City, Maryland. It is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground and leans about 4 degrees to the west. It has the letter P cut in on the east side and the letter M on the west side. The monument is in good condition. It is 561.0 feet east of the center of a north and south blacktop road and 650.0 feet east-southeast of a standard metal witness post and marker.

A geodimeter traverse connection was made to triangulation station JONES, distance being 198.178 meters and (650.18 feet) east-southeast of station JONES.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 71 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 29 23.4716	ELEVATION SCALED	21 METERS FEET
GEODETIC LONGITUDE	75 46 33.7023		

STATE COORDINATES (FEET)				
STATE & ZONE	CODE	A	V	$\theta$ (LOCAL $\theta$ ANGLE)
DE	0700	398,572.66	562,804.20	- 0 13 63
MD	1900	1,145,450.83	605,606.62	+ 0 46 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (LOCAL  $\theta$ ) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION JONES



HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

NOAA FORM 76-39  
112-701

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION, BOUNDARY MONUMENT 72  
NEAREST TOWN Chesapeake City  
CHIEF OF PARTY C.L. Novak  
STATE, Maryland  
COUNTY Cecil  
QUADRANGLE Q380752  
YEAR 1976  
DESCRIBED BY R.G. Pouat

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 72 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976

SECOND ORDER

SOURCE G-10742  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 30 24.31805	ELEVATION	21 METERS
GEODETIC LONGITUDE	75 46 38.63499	NO CHECK	FEET

STATE COORDINATES (FEET)			
STATE & ZONE	CODE	N	E
MD	1900	1,144,981.68	611,757.38
DE	0700	398,210.59	548,962.18

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \Delta \sigma \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From Survey)	PLANE AZIMUTH (From Survey)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION FRED

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS: 1. HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
SURFACE-STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	FEET	METERS	DIRECTION	

The old boundary monument was found in the upright position on the north side of a barn owned by Mr. Charles Erwin. Mr. Erwin stated that he had found the old monument in the prone position in a swamp on his farm and had set it in the present position.

The computed position of the boundary was found to be in a cultivated field. A new point was selected to the north and out of any danger of being disturbed. The old monument was then reset at the selected location on the boundary. It is in a clockwise direction of 3542.44.9" from the azimuth mark at triangulation station FRED 1961 and at a distance of 402.840 meters.

The mark is located 5 miles northwest of Middletown, Delaware. It is 2 1/2 miles southeast of Chesapeake City, Maryland, and about 0.15 mile east of a paved north-south road. The property is owned by Mr. Charles Erwin, Box 268, Chesapeake City, Maryland.

To reach the station from the main intersection in South Chesapeake City, go east on a paved road along the south side of a canal to a T-intersection, bear right and continue easterly on a paved road for 1.4 mile to a crossroad, turn right and go southerly for 1.0 mile to Mr. Erwin's farm on the left and the monument behind the most southerly building.

The monument is a 12-inch square limestone post with a 1-inch cross cut in the apex of the post. It is set in a 2 feet square concrete base consisting of 11 cubic feet of cement. The old post projects 18-inches. There is no sub-surface marker at this point. It is 125 feet east of the southwest corner of the most southerly barn, 15.7 feet west of the southeast corner of the most southerly barn, 2.5 feet south of the south side of the most southerly barn of Mr. Erwin's farm.

For additional information, see description for station FRED 1961.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 225b  
(11-9-55)

DESCRIPTION OF ~~TRIANGULATION~~ **TRIANGULATION STATION**

NAME OF STATION: BOUNDARY MONUMENT 73

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-Nei Castle  
Description, including sketch of object: The station is located about 2.0 miles east-southeast of Chesapeake City, 6.0 miles northwest of Middletown and on property owned by Mr. Ralph Gordy. It is a 11-inch square limestone monument which projects about 50 inches above the surface of the ground and has the letter P on the east side and H on the west side. The monument was recovered in good condition. The property owner stated that the monument has been moved a short distance. It is located in an east and west fence line, 51.0 feet east of a field entrance, 253.0 feet west of a field entrance and 244.0 feet west of a stone wall witness post and marker.

A traverse connection was made to triangulation station PURPLE, distance being 71.555 meters and (254.10) feet west of station PURPLE.

## ADJUSTED HORIZONTAL CONTROL DATA

(see NOTE below)

NAME OF STATION: BOUNDARY MONUMENT 73 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961 SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 31 07.4169	ELEVATION SCALED	12 METERS FEET
GEODETIC LONGITUDE	75 46 42.2503		

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	397,944.73 1,144,639.97	553,324.06 616,113.99
			0 13 49 + 0 46 00

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  FORMULA SELECTING THE SECOND TERM

TOSTATION-ON OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
	0 13 49	0 13 49	

POSITION DETERMINED BY TRAVERSE FROM STATION PURPLE

## NOTE

Monument moved to new location on boundary.  
This position is no longer valid. See  
BOUNDARY MONUMENT 73, 1976.



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-2-55)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 74

CHIEF OF PARTY: R. H. Tomlinson Year: 1961 State: Maryland-Delaware County: Cecil-New Castle  
Description, including sketch of object: The station is located along the west side of a north and south fence line, near the southeast corner of the Bethel Cemetery, about 2.5 miles west of State Highway 396, 1.6 miles east of Chesapeake City and about 20 yards south of the Chesapeake and Delaware Canal. It is a 11-inch square limestone projecting about 30 inches above the surface of the ground, bearing the coat of arms, with the letter H on the west side and P on the east side. It is clipped and leans to the east-southeast. It is at the south end of an evergreen hedge row and the north end of a woven wire fence.  
A traverse connection was made to triangulation station BETHEL RM NO 3, distance being 50.326 meters and (165.11 feet) north of station BETHEL RM NO 3.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 74 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 32' 00.0525	ELEVATION	13 METERS
GEODETIC LONGITUDE	75° 46' 46.4010	SCALED	FEET

STATE COORDINATES (FEET)

STATE & ZONE	CODE	N	E	Y	# OF Δ & ANGLE *
DE	0700	397,640.91	538,651.05	- 0 13 52	
MD	1900	1,144,243.52	621,434.93	+ 0 45 58	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF Δ & FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From true)	PLANE AZIMUTH (From true)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION BETHEL RM 3



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 322b  
(11-8-85)

Traverse

## DESCRIPTION OF ~~BOUNDARY MONUMENT~~ STATION

NAME OF STATION: BOUNDARY MONUMENT 75

CHIEF OF PARTY: R.W. Tomlinson  
Year: 1961 State: Maryland Delaware

Country: New Castle-O Cecil

Description, including sketch of object: Station is a 12 x 12 inch granite stone which projects about 50 inches above the surface of the ground. It has the coat of arms on the west and east side of the monument. It was in a prone position. It was also used to traverse to with a 500 foot tape and angles were turn to it from station WARREN. It is 685.0 feet north-northwest of a east brace post of a east-west fence line and 656.0 feet north of a standard metal witness post and marker. A traverse was made to triangulation station WARREN distance being 651.865 feet and 198.689 meters.

## ADJUSTED HORIZONTAL CONTROL DATA

(see NOTE below)

NAME OF STATION BOUNDARY MONUMENT 75 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SOURCE G-12731  
NO OBSERVATION CHECK ON THIS POSITION

SECOND ORDER

GEODETIC LATITUDE	GEODETIC LONGITUDE	39 32 52.1559	75 46 5D.8DD2	ELEVATION SCALED	16m 18m FEET
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STATE COORDINATES (FMS)				
STATE & ZONE	CODE	X	Y	# OF CHANGES
DE MD	D7DD 19DO	397,317.55 1,143,828.45	563,924.3D 626,7D1.8D	- D 13 55 + D 45 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  -  $\psi$  -  $\Delta$  -  $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
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POSITION DETERMINED BY TRAVERSE FROM STATION WARREN

### NOTE

Monument moved to new location on boundary.  
This position is no longer valid. See  
BOUNDARY MONUMENT 75, 1976.



HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-6-65)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 76

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Delaware-Maryland-County: Cecil- New Castle  
Description, including sketch of object: The station is located in a wooded area on property owned by Mr. Alphonse J. Emerle, about 4 1/2 miles southeast of Elkton, 3 3/4 miles southwest of Glasgow and 3 1/2 miles northeast of North Chesapeake City, 100.0 feet east-north-east of the approximate centerline of a north and south woods road, 79.0 feet north-east of a standard metal witness post and marker and 60.9 feet northeast of a 20-inch white oak tree. The monument is a 15-inch square granite stone projecting about 3.0 feet above the surface of the ground, with the letter H on the west side and P on the east side and it leans slightly and insecure. Surfaces in fine condition except for chipping.

A traverse connection was made to triangulation station EMERLE, distance being 24,044 meters and 78.89 feet northeast of station EMERLE.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 76 DEL MD  
STATE: DELAWARE - MARYLAND YEAR: 1961  
SECOND-ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 33 44.3734	ELEVATION	18 METERS
GEODETIC LONGITUDE	75 46 56.8329	SCALED	FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE MD	0700 1900	397,023.10 1,143,442.06	569,208.99 631,980.64

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$   $\cos \Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM SURVEY)	PLANE AZIMUTH (FROM SURVEY)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION EMERLE

## HORIZONTAL CONTROL DATA

MAY 1977  
U S DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY , NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA 7-4078-39  
112-701  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION		NATIONAL GEODETIC	
NAME OF STATION	BOUNDARY MONUMENT	DATE, Md., Del.	COUNTY
NEAREST TOWN, Chesapeake City		77	Cecil
CHIEF OF PARTY, C. J. Novak		QUADANGLE NO. Q390754	New Castle
YEAR, 1976		DESCRIBED BY R.G. Poust	

DESCRIBED BY. R.G. Poust

YEAR- 1976

NEAREST TOWN Chesapeake City  
CHIEF OF PARTY. C. T. Novak

CH 3143

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	77 DEL MD
STATE	DELAWARE - MARYLAND	YEAR 1976

SECOND

SOURCE C-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39	34	39.69091	ELEVATION	22 METERS
GEODETIC LONGITUDE	75	46	59.32045	NO CHECK	FEET

EVATE COORDINATES (feet)

A complete description follows.

A complete description follows.

The monument is located 3 miles southeast of Elkton, 3 miles northeast of Chesapeake City, 2 1/2 miles north of the C & D Canal, and in the southeast corner of a cultivated field. The property is owned by Mr. [redacted] Chester, Ohio.

To reach the station from the junction of U.S. Highway 40 and State Highway 213 in Elkton, Maryland, go southerly on Highway 213 for 2.4 miles to a side road left, turn left go east on a paved road for 1.5 miles to a side road left. Turn left and go north on a paved road 0.4 mile to a field road on the right, turn right and follow field road east along south side of ditch for 0.3 mile to a wooded area on the left at the southeast edge of a field and the marker.

Boundary Monument number 77 is a 12-inch square limestone post 42-inches high. It is set in a 2 by 2 by 3 feet square mass of concrete and the top of the old monument projects 14-inches. It is 10 feet northwest of a fence corner and 2.3 feet east of a witness post. There is no sub-surface disk at this point.

For additional information, see description for station CHICOSKY 1961.

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976

# POSITION DETERMINED BY TRAVERSE FROM STATION CHICOSKY



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

TRAVERSE

## DESCRIPTION OF NETWORK STATION

NAME OF STATION: BOUNDARY MONUMENT 78

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 2.5 miles southeast of Glasgow, Delaware, 1.0 miles southeast of Elkton, Maryland. It projects about 20-inches above the surface of the ground and leans slightly to the south-westward. The top and center of the stone was traversed to.

A traverse connection was made to triangulation station LAGANO, distance being 99.022 meters north-northwest of station LAGANO. It is a 9 x 12 inch stone projecting about 20 inches.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 78 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER

SOURCE G-12731

### NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 35 28.7255	ELEVATION	16 METERS
GEODETIC LONGITUDE	75 47 03.2399	SCALED	FEET

### STATE COORDINATES (feet)

STATE & ZONE	CODE	X	Y	W (ORD Δ) ANGLE *
DE	0700	396,403.12	579,770.16	- 0 14 03
MD	1900	1,142,638.36	642,529.60	+ 0 45 47

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = (\text{ORD } \Delta) \cdot \rho$  FORMULA, NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION LAGANO

## HORIZONTAL CONTROL DATA

MAY 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

NOAA Form 78-39  
112-70

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION  
BOUNDARY MONUMENT 79 Delaware New Castle  
STATE, Maryland COUNTY Cecil  
QUADRANGLE NO. Q 390754  
YEAR 1976 DESCRIBED BY: R.G. Foust

NAME OF STATION  
NEAREST TOWN GLASGOW  
CHIEF OF PARTY: C.L. NOVAK

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 79 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1976  
SECOND ORDER

SOURCE C-10742

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 36 22.90688	ELEVATION	NO CHECK	29 METERS
GEODETIC LONGITUDE	75 47 07.71056			FEET

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# OF Δ RI ANGLE *
MD	1900	1,142,220.15	648,006.85	+ 0 45 44
DE	0700	396,080.32	585,253.73	- 0 14 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF Δ RI FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF DEC 1976  
POSITION DETERMINED BY TRAVERSE FROM STATION GLASGOW

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK	METERS	HEIGHT OF LIGHT ABOVE STATION MARK	METERS
SURFACE-STATION MARK	DISTANCE	OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
UNDERGROUND-STATION MARK	BEARING	FEET	DIRECTION
OBJECT			

A search was made for the old Boundary Monument number 79 and no evidence of it was found. It was reported destroyed during the construction of U.S. Highway 40. The point was replaced by a crown stone which was found at the Easton Historical Society. It was agreed by Maryland and Delaware that the old crown stone be set at this location. It is believed that the crown stone was originally the stone set at mile number 10.

The monument is located on the north sloping right-of-way of U.S. Highway 40 where it crosses the Maryland-Delaware boundary. It is 2 miles west of Glasgown, and 2 1/2 miles east of Elkton. It is on road right-of-way.

The location of this is adequate to reach. To reach from the intersection of U.S. Highway 40 and State Highway 213 in the southwest part of Elkton, go east on U.S. Highway 40 for 2.4 miles to the point where the highway crosses the boundary and the monument on the left.

The surface monument is a defaced Maryland-Delaware Crown Stone. It has been grouted to a 12 by 12 concrete base. The base is set in an 18-inch square 24-inch long mass of concrete. The monument projects 1 foot. The sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S NO. 79 1976, set in an 8-inch mass of concrete which is 36 inches below the surface. A 1-inch cut cross in the apex of the stone marks the point intersected. They are 60 feet east of a 12-inch poplar tree, 30 feet north of the center line of the west bound lane of U.S. Highway 40, and 2 feet south of a witness post.

For additional information, see the description for station GLASGOW 1961.

HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF TRIANGULATION INTERSTATION STATION  
NAME OF STATION: BOUNDARY MONUMENT 80

CHIEF OF PARTY: R. W. Tomlinson Year: 1961 STATE: Maryland-Del. County: Cecil-New Castle  
Description, including sketch of object: The station is located about 2.5 miles east-northeast of Elkton, Maryland, 2.5 miles northwest of Glasgow, Delaware. It is a 9 x 12-inch stone projecting about 20 inches above the surface of the ground, at the apex and center of the stone is a nail, the nail head marking the center of the monument. The stone is in good condition. On the sides of the stone is inscribed the coat of arms.  
A traverse connection was made to triangulation station OLAH, distance being 8,085 meters northeast of station OLAH. The monument is at the west edge of a hedge row.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 80 DEL MD SECOND - CROSS  
STATE DELAWARE - MARYLAND YEAR 1961

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 37' 13.4958	ELEVATION SCALED	32 METERS FEET
GEODETIC LONGITUDE	75° 47' 11.8304		

STATE COORDINATES (APR)			
STATE & ZONE	CODE	X	Y
DE	0700	395,778.93	590,373.74
MD	1900	1,141,829.67	653,120.96

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$   $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION ON OBJECT		DECODED AZIMUTH (From angle)	PLANE AZIMUTH (From angle)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION OLAH

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

FIG. 325  
(11-7-54)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION ~~STATION~~ <sup>TRAVERSE</sup> STATION

NAME OF STATION: Boundary Monument 81

CHIEF OF PARTY: J. C. Ellerbe YEAR: 1958 STATE: Maryland COUNTY: Cecil

Comments, including sketch of object:

The mark is about 4 miles SW of Newark, Delaware, about 3 miles NE of Elkton and near the Maryland-Delaware State Line. The mark is 21 feet W of the center of road and 12 feet NNE of a large tree. It is a 12x12-inch stone monument projecting about 18 inches with the letter M on the west side and letter P on the east side. A traverse connection was made to OTTS 1958.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT 81 DEL MD

STATE: DELAWARE - MARYLAND YEAR: 1958

SECOND - ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 38 05.8088	ELEVATION SCALED	53 meters FEET
GEODETIC LONGITUDE	75 47 16.0710		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD DE	1900 0700	1,141,427.56 395,468.96	658,409.42 595,668.25
			+ 0 45 39 - 0 14 12

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TOSTATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION OTTS



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 OATUM

### DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U S COAST AND GEODETIC SURVEY  
WASHINGTON  
May Aug 1948

NAME OF STATION: TANKTINT =  
STATE: Maryland - Bellevue COUNTY: Cecil  
New Castle

CHIEF OF PARTY: J. C. Callarbo  
YEAR: 1958  
Described by: H. C. H.

CHIEF OF PARTY: J. C. Allorbo		Year: 1958		Described by: W. C. H.	
NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	1	METERS.
1. R.O.C.	Surface station mark, Underground station mark				

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
110 PERH				
reference mark No. 1	ESE	199.40	60.777	000 00 00.0
110				
reference mark No. 2	SSE	195.91	59.713	223 14 42
110				
				273 31 37

Station is located about 4 miles southeast of Newark, about 2½ miles northeast of Elkton, about 2 miles southwest of Elk Mills, and ½ mile northeast of Iron Hill railroad depot. It is 2½ feet northwest of most westerly rail of the Pennsylvania Railroad track, 178½ feet northwest of fence-line, and beside old tangent stone of Mason-Dixon. The mark is 18 by 11 inches, projects 28 inches. The letters H and D are very faintly, also the word REFINED and the date 1849. Point intersected was apex of the larger granite stone.

Reference mark No. 1. Point intersected of fence-line, 13½ feet northwest of center-line of track road, 62½ feet northwest of the most westerly rail of railroad tracks of the Pennsylvania Railroad, and 4½ feet east of the south end of a culvert. The mark is a standard reference mark disk set in a 10 by 10 inch concrete monument, projects 2 inches and the disk is stamped MARK NO. 1 1858.

reference mark No. 2 is 1 foot southeast of fence line, 12 feet northwest of center line of track road, 624 feet northwest of the most westerly rail of the Pennsylvania Railroad tracks. The mark is a standard reference mark disk set in a 10 by 10 inch concrete monument, flush with the ground and the disk is stamped TANGENT NO. 2 1950.

To reach from the post office in Elkton, go east on State Highway No. 7 for 0.1 mile, turn left, and go north and northeast on State Highway No. 279 for 2.75 mile to forks, keep right fork (State Highway No. 279) for 2 mile to side road right, turn right on narrow gravel road and go southeasterly for 0.3 mile to a side road left leading to railroad gravel road, turn left and go northerly for 0.25 mile to station on left described.

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TANGENT  
 ESTABLISHED BY: J.C.E.  
 Year: 1938. State: Maryland-Delaware.  
 Recovered by: R.W. Tomlinson Year: 1961. County: Cecil-New Castle.

The station mark, reference marks 1 and 2 were recovered as described and in good condition. The description are adequate.

OBJECT	BEARINGS	1961 DISTANCE feet	1961 DIRECTIONS meters
1. 150° -		0	00
2. 195° -		0	00
3. R.M. NO. 1 -	SE -	199.40	46 20 08.25
4. R.M. NO. 2 -	SE -	195.91	159 56 59.3
		55E -	205 53 53.4
			59.712

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUINARY MON 82 TANGENT STONE
STATE	DELAWARE - MARYLAND
	YEAR 1958

NOVAC. C-12731

DEGORTIC LATITUDE	DEGORTIC LONGITUDE	ELEVATION	36.08 METERS
39° 38'	56.5612	ND CHECK	118.4 FEET
75° 47'	20.2050		

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	X	Y	Easting, Northing	
MD	1900	1,141,036.01	663,540.13	+	0 45 36
OE	0700	395,166.81	600,804.83	-	0 14 15

• PLANE ALGORITHM HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

	TOBACCO OR OBJECT	GEODESIC ALTIMETER (From marks)	PLANE ALTIMETER (From marks)	CODE
PENN		58 4.6	18.6	1900
PENN		58 4.6	18.6	0700

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TANGENT

RECEIVED BY: J.C.E.  
 YEAR: 1958  
 COUNTY: Cecil-New Castle  
 YEAR: 1977  
 DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles southwest of Newark, Delaware

The station and all marks were recovered and found in good condition as previously described.

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 323b  
(11-8-59)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Maryland-Delaware State Boundary Marker ARC Stone No. 1

CHIEF OF PARTY: J.C. Ellerbe YEAR: 1958 STATE: Delaware COUNTY: Cecil

Description, including sketch of object: Station is located about 3 miles north northeast of Elkton, Md. and about 2 1/2 miles southwest of Newark, Del. and on the State Line. Station is 24 feet west of a utility pole, 16.5 feet south of the center of road, 14 feet west of Historic Marker and 2.5 feet north of fence line. The mark is a granite stone that projects about 18 inches.

A traverse connection was made to the approximate center of a hole in the top of the stone and the distance is 198.035 meters or 649.71 feet north of ARC.

To reach station from the Post Office in Newark go west on Main Street for 0.4 mile to forks and railroad tracks. Take left fork and go southwesterly on Elkton Road for 2.4 miles to the State Line, and station on the left as described.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MARYLAND DEL BDRY ARC STONE 1  
STATE: DELAWARE - MARYLAND YEAR: 1958  
SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38° 39' 14.8262	ELEVATION SCALED	38 METERS FEET
GEODETIC LONGITUDE	75° 47' 21.2526		

## STATE COORDINATES (feet)

STATE & ZONE	CODE	X	Y	# OF $\Delta$ BY ANGLE *
MD DE	1900 0700	1,140,929.56 395,092.53	665,387.06 602,653.27	+ 0 45 36 - 0 14 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OF  $\Delta$  BY FORMULA SELECTING THE SECOND TERM.

TOSTATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
ARC	6 17 46.4	5 32 11	1900
ARC	6 17 46.4	6 32 02	0700

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

Form 325b  
(11-8-55)

## DESCRIPTION OF TRANSSECTION STATION

Maryland-Delaware  
NAME OF STATION: ARC STONE 2

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Delaware COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 2.5 miles southwest of Newark, Delaware, 2.0 miles east-southeast of Elk Mills, Maryland, on property of E. I. Dupont and Company, Incorporated, Stine Laboratories, 200.0 feet west of the centerline of a dirt track road and 63.4 feet north of an east and west fence line and north edge of a timberline and is inclosed by a pole fence.

A traverse connection was made to triangulation station BOUNDARY MONUMENT 83, distance being 400.054 meters south of station BOUNDARY MONUMENT 83. It is Arc Stone No. 2 1765, an unmarked stone. It has been broken off at ground level and now sets on old base or what is believed to be old base at the original location. It is a 7 X 12 inch stone projecting about 28 inches above the surface of the ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION MARYLAND DEL BDRY ARC STONE 2

STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 39 34.4473	ELEVATION SCALED	34 METERS FEET
GEODETIC LONGITUDE	75 47 21.6830		

### STATE COORDINATES (FEET)

STATE & ZONE	CODE	X	Y	B ORIGIN ANGLE *
DE	0700	395,067.11	604,638.73	- 0 14 16
MD	1900	1,140,869.57	667,371.84	+ 0 45 35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B \sin \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	CODE

POSITION DETERMINED BY TRAVERSE FORM STATION BDRY MON 83

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 322b  
(11-6-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRANGULATION~~ ~~TRIANGULATION~~ STATION

NAME OF STATION: ARC STONE 3

CHIEF OF PARTY: R. V. Tomlinson YEAR: 1961 STATE: Delaware- Maryland COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 2.5 miles southwest of Newark, Delaware, 2.0 miles east-southeast of Elk Hills, Maryland, on property of E. I. Dupont and Company, Incorporated, Stine Laboratories, 200.0 feet west of the centerline of a dirt track road, 104.0 feet north of an east and west fence line at the north edge of a timberline and 40.6 feet north of Arc Stone No. 2.

A traverse connection was made to triangulation station BOUNDARY MONUMENT 83, distance being 597.662 meters south of station BOUNDARY MONUMENT 83. It is Arc Stone No. 3 1849, was placed at the center of the Meridian, of the arc by Graham's Survey in 1849. It is a 8 x 12 inch granite stone projecting about 25 inches above the surface of the ground. A small cross was etched at the apex and center of the stone to hold the center point for measuring. The letter M is engraved on the west side and letter D, 1849 on the east side.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MARYLAND DEL BDRY ARC STONE 3

STATE: DELAWARE - MARYLAND YEAR: 1961

SECOND ORDER

SOURCE: C-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 39 34.8496	ELEVATION SCALED	34 METERS
GEODETIC LONGITUDE	75 47 21.7192		FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	395,064.45	604,679.44
MD	1900	1,140,866.20	667,412.50

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$   $\cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION BDRY MON 83



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOUNDARY MONUMENT 83 STATE: Delaware-Maryland COUNTY: Cecil-New Castle

CHIEF OF PARTY: R. A. Tomlinson, Year: 1961  
(Arc Stone 4)

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.28 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
DESC. Surface station mark, which can be seen from this station at the station

OBJECT	BEARING	DISTANCE	DIRECTION
GRAYS HILL 2 1958	W	93.35	0 00 00.0
11a Reference mark 2	WNW	28.452	70 00 41
16a Azimuth mark	N	Approx. 0.15 mile	111 16 12.1
ARC STONE 5 (traverse, geodimeter)	SSE	221.895	174 11 24.72
11c Reference mark 1	S	33.03	331 31 21
ARC STONE 2 (traverse, geodimeter)	S	400.154	353 28 35.59
ARC STONE 3 (traverse, geodimeter)	S	387.662	353 37 29.59

The station is located about 2.5 miles southwest of Newark, Delaware, 2.0 miles east-southeast of Elk Mills Maryland, on property of E.I. Dupont and Company, Incorporated, Stine Laboratories.

To reach the station from the post office in Newark, Delaware; go west on Main Street for 0.4 mile to a triple fork at a railroad crossing. Take the left hand fork of three and go south-southwest on State Highway 2, Elkton Road, for 2.05 miles to the second entrance of the Stine Laboratories on the right. Turn right and go north for 0.05 mile to a steel gate and guard building. Pass through the gate, register with guard, and continue north for about 200.0 feet to a 1-street intersection. Turn left end go west for 0.05 mile, thence north for 0.15 mile on the paved street, thence west for 0.05 mile to a steel gate. Turn right, pass through the gate, and go northwest end north on a gravelled road for 0.1 mile to the southwest corner of a small orchard; continue north along the west side of the orchard for 0.1 mile to a fork of dim track roads at the northwest corner of the orchard. Take the right hand fork and continue north on the dim track road for about 120 feet to the monument and station.

The station is boundary monument No. 83, a 12-inch square granite stone with the letter H on the west side and letter D on the east side. It projects about 14 inches and is inclosed by a pole fence. It is 121.0 feet north of the northwest corner of an orchard and intersection of dim forks and 100.0 feet east of a track road. A cross at the apex and center of the stone is the station point.

Reference mark 1, a standard disk stamped BDY MON 83 NO 1 1961, is set in top of a square concrete monument projecting about 2-inches above the surface of the ground. It is 52.0 feet east of the northwest corner of orchard and dim track road fork.

Reference mark 2, a standard disk stamped BDY MON 83 NO 2 1961, is set in top of a square concrete monument projecting about 2-inches above the surface of the ground. It is 6.5 feet east of a dim track road.

The azimuth mark, a standard disk stamped BDY MON 83 1961, is set in top of a square concrete monument projecting about 2-inches above the surface of the ground. It is 10.6 feet east-southeast of a 10-inch maple tree and 2.0 feet southeast of a standard metal witness post end marker.

To reach the azimuth mark from the station; go north on the dim track road from the dim forks at the northwest corner of the orchard, for 0.1 mile to the south edge of a timber-line. Turn left and go west along the south edge of timber for 0.05 mile to a standard metal witness post and marker and the azimuth mark as described.

Arc Stone No. 2 1965, an unmarked stone. It has been broken off at ground level and now sets on old base or what is believed to be old base at the original location. It is a 7 X 12 inch stone projecting about 28 inches above the surface of the ground, 200 feet west of the centerline of a dim track road and 63.4 feet north of an east and west fence-line and north edge of timberline and inclosed with a pole fence.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MON 83 ARC STONE 4

STATE: DELAWARE - MARYLAND YEAR: 1961

SECOND - ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 39 47.4182	ELEVATION	36.6 METERS
GEODETIC LONGITUDE	75 47 21.4926		120 FEET

STATE COORDINATES (FEET)

STATE & ZONE	CODE	X	Y	# OF Δ	DI ANGLE
DE	0700	395,087.45	605,951.09	-	0 14 16
MD	1900	1,140,867.05	668,684.41	+	0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF Δ DI FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM STATION)	PLANE AZIMUTH (FROM STATION)	CODE
AZIMUTH MARK	118 26 36.2	118 40 52	0700
AZIMUTH MARK	118 26 36.2	117 41 01	1900

Arc Stone No. 3 1849, was placed at the center of the Meridian, of the arc by Graham's Survey in 1849. It is a 8 X 12-inch granite stone projecting about 25 inches above the surface of the ground. A small cross was etched at the apex and center of the stone to hold as a center point for measuring. The letter H on the west side and D, 1849 on the east side of the stone. It is about 200.0 feet west of the centerline of a dim track road, 104.0 feet north of an east and west fence-line at the north edge of a timberline and 40.6 feet north of Arc Stone No. 2.

Arc Stone No. 5 1965, is an unmarked stone placed on the Arc in 1965. It leans slightly. It is a 6 X 12-inch stone projecting about 14 inches above the surface of the ground. It is about 500.0 feet south-southwest of a blacktop road, 160.0 feet north-east of the west edge of a timberline and 85.0 feet southeast of the south edge of a timberline and is inclosed by a pole fence.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1972 DATUM

Form 320b  
(11-8-85)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE  
DESCRIPTION OF ~~TRANGULATION STATION~~ ~~BOUNDARY MONUMENT~~ STATION  
Maryland-Del. Bdy. Stone 5

NAME OF STATION: R. W. Tomlinson YEAR: 1961 STATE: Delaware COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 2.5 miles southwest of Newark, Delaware, 2.0 miles east-southeast of Elk Mills, Maryland, on property of E. I. Dupont and Company, Incorporated, Stine Laboratories, 500.0 feet south-southwest of a black-top road, 160.0 feet northeast of the west edge of a timberline and 85.0 feet south-east of the south edge of a timberline and is inclosed by a pole fence. This stone is unmarked, placed at its location in 1765, it leans slightly.

A traverse connection was made to triangulation station BOUNDARY MONUMENT 83; distance being 221.895 meters north of station BOUNDARY MONUMENT 83. It is an unmarked stone, 6 x 12 inches and projecting about 14 inches above the surface of the ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION MARYLAND DEL BDRY ARC STONE 5  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 39 54.6109	ELEVATION SCALED	35 METERS FEET
GEODETIC LONGITUDE	75 47 21.2711		

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# FOR Δ & INCHES *
DE	0700	395,107.79	606,678.80	- 0 14 16
MD	1900	1,140,874.72	669,412.39	+ 0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # FOR Δ & FORMULA A NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION BDRY MON 83

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 525b  
(11-8-65)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF ~~TRANSSECTION~~ INTERSECTION STATION  
NAME OF STATION: INTERSECTION STONE 2

ADJUSTED HORIZONTAL CONTROL DATA

CHIEF OF PARTY: R. A. Tomlinson YEAR: 1961 STATE: Maryland-Del. COUNTY: Cecil-New Castle  
square

Description, including sketch of object: The station is located about 2.0 miles southwest of Newark, Delaware, 2.0 miles east-northeast of Elk Mills, Maryland and on property of the I. E. Dupont and Company Incorporated Stine Laboratory. It is a 12-inch triangular prism stone of granite set by Grabin in 1949 in place of unmarked monument described immediately above. All edges clipped but monument firm and upright.

A traverse connection was made to triangulation station PRISM, distance being 21.049 meters southeast of station PRISM. The stone projects about 40 inches above the surface of the ground and is protected by a pole inclosure. It is 69.8 feet south-southeast of a standard metal witness post and marker.

NAME OF STATION HD DEL BDRY INTERSEC STONE 2

STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 40 13.0348	ELEVATION SCALED	40 METERS FEET
GEODETIC LONGITUDE	75 47 20.1972		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	395,199.51	608,542.63
MD	1900	1,140,933.97	671,277.60

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From IGSMB)	PLANE AZIMUTH (From IGSMB)	CODE
	0	0	

POSITION DETERMINED BY TRAVERSE FROM STATION PRISM

## HORIZONTAL CONTROL DATA

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

Form 5230  
(11-8-55)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

## DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: BOUNDARY MONUMENT 84

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-New Castle

Description, including sketch of object: The station is located about 3.0 miles south of the Pennsylvania State line, 2 1/2 miles northeast of Elk Mills, Maryland, 2.0 miles west-southwest of Newark, Delaware and on property owned by Mr. Clarence S. Foster. It is a 15-inch square granite monument projecting about 2 1/2 feet above the surface of the ground and leans to the south at about a 15 degree angle. The upper edges are chipped badly and marked with a M on the west side and a P on the east side. It is 59.0 feet north-east of the southwest fencecorner and 42.3 feet north of the east and west fence line. A traverse connection was made to triangulation station FOSTER, distance being 9.679 meters and 23.43 feet northeast of station FOSTER.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 84 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961

SECOND ORDER A

SOURCE G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 40' 41.7068	ELEVATION	51 METERS
GEODETIC LONGITUDE	75° 47' 20.1841	SCALED	FEET

STATE COORDINATES (Feet)				
STATE & ZONE	COD	X	Y	SECTION
DE MD	0700 1900	395,212.56 1,140,896.50	611,443.75 674,178.62	- 0 16 16 + 0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FOLLOWING FORMULA NEGLECTING THE SECOND TERM

TORATION OF OBJECT	GEODETIC AZIMUTH (FROM OBJECT)	PLANE AZIMUTH (FROM OBJECT)	COD

POSITION DETERMINED BY TRAVERSE FROM STATION FOSTER



Form 523b  
(11-8-55)  
U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

DESCRIPTION OF ~~TRANGULATION/INTERSECTION~~ STATION  
NAME OF STATION: Boundary Monument 85

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 STATE: Maryland-Delaware COUNTY: Cecil-New Castle  
Description, including sketch of object: The station is located about 3.0 miles northeast of Elk Mills, Maryland, 2.0 miles west-northwest of Newark, Delaware. It is a 9 x 12 inch stone projecting about 25 inches above the surface of the ground and at the northwest corner of a house and has been reset in the past and at the present time is leaning to the south at about a 45 degree angle.  
A traverse connection was made to triangulation station PETERS, distance being 18.910 meters east of station PETERS.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MONUMENT 85 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39° 41' 33.9324	ELEVATION	6 meters
GEODETIC LONGITUDE	75° 47' 20.1574	SCALE	1:20

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	395,236.58	616,728.09
MD	1900	1,140,828.49	679,462.80

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \arcsin \frac{Y}{R}$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION PETERS

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NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
TRAVERSE

# DESCRIPTION OF THE CULTURE AT THE BOUNDARY STATION

NAME OF STATION: Boundary Monument 86

CHIEF OF PARTY:	R. W. Tomlinson	YEAR, 1961	STATE, Maryland-Delaware	COUNTRY, Cecil-New Castle
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Description, including sketch of object: The station is located about 4.0 miles east of Fair Hill, Maryland, 2.5 miles northwest of Newark, Delaware. The stone is 12-inches square, marked with the letter M on the west side and the letter P on the east side and protrudes about 10 inches above the surface of the ground.

A traverse connection was made to triangulation station SCOUTS, distance being

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	BOUNDARY MONUMENT	86 DEL MD
STATE	DELAWARE - MARYLAND	year 1961

SECOND-ORDER

SOURCE: G-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	°	'	"	ELEVATION SCALED	79 JANUARY 1987
39 42 26.1893					
75 47 20.1754					

STATE COORDINATES (feet)				
STATE & ZONE	CODE	X	Y	$\theta = \text{ON } \Delta \text{ W. ANGLE } ^{\circ}$
DE	0700	395,257.12	622,015.62	- 0 14 16
MD	1900	1,140,756.93	664,750.13	+ 0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

PLANE AZIMUTH DETERMINED BY THE METHOD OF	TO REFLECTION OR OBJECT	GEOSTIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE

### POSITION DETERMINED BY TRAVERSE FROM STATION SCOUTS

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

FORM 5226  
(11-8-55)

NAME OF STATION:  
Recovered By:  
Chief of Party:

DESCRIPTION OF TRIANGULATION/INTERSECTION STATION  
BOUNDARY ADJUTANT 87 - M.D.P. CORNER RM 2

R. W. Tomlinson YEAR: 1961 STATE: Maryland-Penn- COUNTY: Cecil-New Castle  
sylvania  
Description, including sketch of object: Located about 10.0 miles southeast of Jennersville, Penn-  
sylvania and about 3.5 miles north-northwest of Newark, Delaware and 0.15 mile south-  
east of State Highway 696, 92.2 feet south of triangulation station M. P. D. CORNER  
1935, 12.0 feet southwest of a 30-inch poplar tree and 12.0 feet south of the center  
of a small stream. It is a 15-inch square stone projecting about 18 inches above the  
surface of the ground with a U. S. Coast and Geodetic Survey disk mounted in its top  
and center. The disk is stamped M. D. P. CORNER NO 2 1935 and is a standard reference  
mark disk. This stone is at the north end of the Delaware State Line and the east  
end of the Maryland State Line with a wedge, separating the corner between Maryland,  
Delaware and the circle and the North Line of Pennsylvania.  
A traverse connection was made to triangulation station M. D. P. CORNER 1935, dis-  
tance being 28.094 meters and (92.171 feet) south of station M. D. P. CORNER 1935.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BOUNDARY MON B7 MDP COR RM 2  
STATE DELAWARE - MARYLAND YEAR 1961  
SECOND ORDER

SOURCE C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 43 19.5216	ELEVATION	78 METERS
GEODETIC LONGITUDE	75 47 20.1714	SCALED	FEET

STATE COORDINATES (PPM)			
STATE & ZONE	CODE	X	Y
DE	0700	395,279.83	627,411.98
MD	1900	1,140,685.65	690,146.33

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi - \mu - \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From 1927)	PLANE AZIMUTH (From 1927)	CODE

POSITION DETERMINED BY TRAVERSE FROM STATION MDP CORNER

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ALLEN  
STATE: DELAWARE

YEAR 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 40 38.6485	ELEVATION	14.2 METERS
GEODETIC LONGITUDE	75 42 39.0939		47 FEET

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	N	E	Y	θ OR Δ θ: ANGLE °
DE	0700	416,008.28	246,826.13	- 0 11 02	
MD	1900	1,168,021.25	309,987.70	+ 0 48 33	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ OR Δ θ: FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from south)	CODE
AZIMUTH MARK	181 06 55.4	181 17 57	0700
AZIMUTH MARK	181 06 55.4	180 18 23	1900

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: ALLEN STATE: Delaware COUNTY: Sussex

CHIEF OF PARTY: R.W. Tomlinson - YEAR: 1962 - Described by: E.G. Keapari -

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 28.14 - METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30.75 - METERS.

1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
FEDERAL 2				
11a Reference Mark No. 2	RW	142.09	43.310	0 00 0.0
16a Azimuth Mark	N	approx	0.45 mile	34 18 15
11a Reference Mark No. 1	SW	108.10	32.950	78 47 55.5
11a Boundary Monument	W	(67.582)	20.599	297 11 24.6
				345 15 09.7

Station is located about 1.0 mile north of Oak Grove, 4.0 miles southeast of Federalburg Maryland, 5.5 miles northeast of Seaford Delaware, and about 0.4 mile south of the Bethel Church and Cemetery.

To reach the station from the intersection of main street and central ave. in Federalburg Maryland, go easterly on State Highway 318 for 0.35 mile to the junction of State Highways 318 and 306, keep the right fork and continue easterly on State Highway 318 for 2.8 miles to a church on the left and a side road on the right, turn right, go southerly on the macadam road for 1.5 miles to forks at the Bethel cemetery on the left, take the right fork and go southerly for 0.4 mile to a side road right, continue for 0.1 mile to the station on the left.

Station Mark, a standard disk stamped ALLEN 1962, set in the top of a 10 X 10 inch square concrete monument, that is 18 inches below the ground surface. It is 51.0 feet east of a black top road; 82.0 feet east of a north-south timber line.

Reference Mark No. 1, a standard disk stamped ALLEN NO. 1 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 2 inches above ground surface. It is 27.6 feet east of a black top road; 65.0 feet east of a cultivated field; 9.0 feet north of a 10 inch pine tree.

Reference Mark No. 2, a standard disk stamped ALLEN NO. 2 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 2 inch from ground surface. It is 39.6 feet west of a black top road; 69.0 feet west of a cultivated field; 13.4 feet northeast of a 8 inch oak tree.

Azimuth Mark, a standard disk stamped ALLEN 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 31.0 feet north of center of macadam road; 12.0 feet south-southwest of a 6 inch cedar tree; 55.0 feet east of a 12 inch cedar tree; 52.0 feet west of a driveway to the church.

Boundary Monument No. 15, a 12 X 12 inch square monument, projecting 30 inches from the ground, with a cord of arms on the east and west side. It is 17.0 feet west of a black top road; 18.0 feet east of a north-south woods line; 30.0 feet west of a cultivated field.

Detailed description:



JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: ARC

ESTABLISHED BY: J. C. E.

YEAR: 1958

STATE: Maryland

BENCH MARK ALSO ☒

RECOVERED BY: J. C. E.

YEAR: 1977

COUNTY: Cecil

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/2 miles southwest of Newerk, Del.  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE FEET	DIRECTION
TANGENT 1958	S	369.428	0 00' 00.00"
RM 4	SW	7.718	41 08 20
Line Reset 1958 MBGS	W	100.435	96 21 45.4
RM 3	SE	50.72	15.462 317 57 28
RM 3 to RM 4		53.94	16.528

The station mark was recovered and found in good condition. Both reference marks were destroyed by the construction of Mr. McIntire's house. ARC stone number 1 1958 is no longer visible from the ground. Two new reference marks were set at this date.

A complete new description follows.

The station is located 22 miles northeast of Aberdeen, 3 miles northeast of Elkton, 2 1/2 miles southwest of Newerk, Delaware, and on property owned by Mr. C. H. McIntire, and Mr. McIntire lives in a house which is near the station.

To reach from the intersection of Interstate Highway 95 and State Highway 279 which is 3 miles northeast of Elkton, go northeast on State Highway 279 for 1.0 mile to line reset 1958 MBGS on the right. Continue northeast on State Highway 279 for 0.05 miles to a farm road on the right. Turn right, go southeast on the farm road for 0.05 mile to the station on the left.

The station mark is a standard disk stamped ARC 1958, set in the top of a 10-inch round concrete monument which is flush with the surface. It is 88 feet southeast of a powerline pole numbered C & P 1. 48 feet east of a 12-inch maple tree, 16.5 feet southwest of the most westerly entrance to Mr. McIntire's house, and 15 feet northeast of the center of the farm road. (NOTE 1b 7a)

Reference mark three is a standard disk stamped ARC 1958 NO 3 1977 set in the top of a 10-inch round concrete monument which is flush with the surface. It is 35.8 feet south of the most south corner of the house, 7 feet northeast of the center of the farm road, and 2.5 feet west of a powerline pole. (NOTE 1b)

Reference mark four is a standard disk stamped ARC 1958 NO 4 1977 set in the top of a 10-inch round concrete monument which is flush with the surface. It is 40.7 feet southeast of the most west entrance to the house, 34.6 feet southeast of the 12-inch maple tree, and 10 feet southwest of the center of the farm road. (NOTE 1b)

LINE RESET 1958 MBGS is a Maryland Bureau of Control Survey disk stamped LINE RESET 1958, set in the top of a 6-inch round concrete monument which projects 8 inches. It is 64 feet east-northeast of a powerline pole numbered NMP007, 40 feet southeast of the center of State Highway 279 and 1 foot north of a witness post.

Triangulation Station TANGENT 1958 may be used as an azimuth mark for this station, see description thereof.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ARC

STATE: MARYLAND

YEAR: 1958

SECOND ORDER

SOURCE: G-12012

GEODETIC LATITUDE	39 39 08.4438	ELEVATION	43.21 METERS
GEODETIC LONGITUDE	75 47 22.1635		141.8 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,140,866.88	664,740.35
DE	0700	395,018.60	602,007.78
PA S	3702	2,552,037.60	122,338.75

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
OTTS	355 52 12.78	355 06 38	1900
OTTS	355 52 12.78	356 06 29	0700
OTTS	355 52 12.78	354 35 54	3702

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. NAUTICAL GEODETIC SURVEY  
Rev. Aug. 1964

NAME OF STATION: ATLANTA

STATE: Delaware

COUNTY: Sussex

CHIEF OF PARTY: R. W. Tomlinson

YEAR: 1962

Described by: Harvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.76 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS.  
1a Surface-station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION  
7a Under-ground-station mark

OBJECT	BEARING	DISTANCE	DIRECTION
TANTYARD RM 3 (Geod. distance)		1449.774	00 00 00.0
ATLANTA AZIMUTH MARK (Geod. distance)	SSW	922.913	00 44 50.79
11a Reference Mark 2	W	32.11	75 49 49.0
Desc. Boundary Monument	N	93.787	169 28 06.8
11a Reference Mark 1	SSE	(307.756) 13.468	336 42 39.2
		44.19	

The station is located along the north right-of-way of Delaware State Highway 18 and Maryland State Highway 318 at the Maryland-Delaware State line, about 6.5 miles west-southwest of Bridgeville, Delaware and 3.5 miles east-northeast of Federalsburg, Maryland.

To reach the station from the Intersections of Main Street and Central Avenue in Federalsburg; go east on State Highway 318 for 0.35 mile to the junction of State Highways 306 and 318. Take the right hand fork and go east-northeast on State Highway 318 for 3.15 miles to the Maryland and Delaware State line and the station on the north side of the highway.

To reach the azimuth mark from the station; go west on Maryland State Highway 318 for 0.4 mile to a side road on the left and a Church Building on the right. Turn left and go south-southeast on a blacktop road for 0.5 mile to a farm lane on the left. Turn left and go east on the farm lane for 0.2 mile to a telephone pole, a standard metal witness post and marker and the azimuth mark.

The station mark, a standard disk stamped ATLANTA 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 22.5 feet north of the centerline of State Highways 318 and 306, 8.5 feet south of the south edge of a cultivated field, 4.5 feet west of a standard metal witness post and marker and 4.5 feet west of the north steel sign post of Maryland-Delaware State Line sign.

Reference Mark 1, a standard disk stamped ATLANTA NO 1 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 45.5 feet south of a standard metal witness post and marker, 22.0 feet south of the centerline of the highway, 1.4 feet west of the south steel post sign of the Maryland-Delaware State Line sign, and about the same elevation as the station.

Reference mark 2, a standard disk stamped ATLANTA NO 2 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 36.0 feet west of a standard metal witness post and marker, 24.0 feet north of the centerline of the highway, 1.0 foot north of Maryland State Highway 318 sign post and about the same elevation as the station.

The azimuth mark, a standard disk stamped ATLANTA 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 120.0 feet north-northeast of the northwest corner of a farm house, 6.6 feet south of the centerline of a driveway, 3.7 feet east of a standard metal witness post and marker and a telephone pole, above the surface of the ground, leans about 6 degrees to the south, chipped badly on the east side, with the letter H cut in on its west side and P on the east, a small cross was inscribed in its top and center for traverse purpose on this date. It is 200.0 feet north of the centerline of State Highway 318, 150.0 feet east of the centerline of a driveway and in a cultivated field.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ATLANTA

STATE: DELAWARE

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 42 19.9853	ELEVATION	16.1 meters
GEODETIC LONGITUDE	75 42 47.5521		46 feet
STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	415,370.67	257,080.08
MD	1900	1,167,206.06	320,228.56
			± 0 11 08
			+ 0 48 28

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cdot \cos \Delta$  FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
ATLANTA AZ HK	2 17 20.6	2 28 28	0700
ATLANTA AZ MK	2 17 20.6	1 28 53	1900

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BENNETT, STATE: Delaware, COUNTY: New Castle

CHIEF OF PARTY: R.M. Tomlinson, Year: 1961, Described by: V.D. Novak.

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	HEIGHT OF LIGHT ABOVE STATION MARK		METERS	FEET
			1	2		
1a.	Surface-station mark					
7a.	Underground-station mark					
16a.	Azimuth mark (The azimuth mark was Observed and Geodimeter to.)					
11a.	R.M. 2					
Desc.	Boundary Monument 58 (traverse)					
11b.	R.M. 1					

The station is located about 3 1/2 miles east of Macee, Maryland, 2 1/2 miles south of Colter, Maryland and on property owned by Mr. J.E. Bennett who gave permission to reach the station from the crossroads in Macee, Maryland go easterly on asphalt road for 2.9 miles to the azimuth mark on the right, continue easterly on asphalt road for 0.6 mile to the State line and the station on the left.

Station, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 1-inch below the surface of the ground, stamped "BENNETT 1961". It is 23.5 feet north of the north edge of concrete road which is the approximate center of the road, 7.0 feet south-southeast of a standard metal witness post and marker, 5.5 feet northeast of a guy wire for powerline pole number 6809 and 5.5 feet south of powerline pole number 6809.

Reference mark 1, is a standard disk set in the top of 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "BENNETT NO 1 1961". It is 34.5 feet east of a standard metal witness post and marker, 30.0 feet east of powerline pole number 6809, 28.0 feet north of the north edge of concrete road which is the approximate center of the road and 1.5 feet south of the fence line.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "BENNETT NO 2 1961". It is 29.8 feet west-southwest of powerline pole number 6809, 25.3 feet west-southwest of a standard metal witness post and marker, 27.5 feet north of the approximate center of a asphalt road and 2.2 feet south of a fence line.

Azimuth mark, is a standard disk set in the top of a 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "BENNETT 1961". It is 34.0 feet south of the approximate center of a asphalt road, 42.0 feet east of a 2 x 2 feet boulder which projects about 5.0 feet above the ground, 4.0 feet southwest of a standard metal witness post and marker and 1.0 foot south of a fence line.

Boundary Monument No. 58, a 12-inch square limestone monument projecting about 4 inches above the surface of the ground, setting plumb and in good condition. It is 30.0 feet north of the centerline of an east and west blacktop road, 25.0 feet west of a powerline pole, 21.0 feet west of a standard metal witness post and marker and 2.0 feet south of an east and west fence line.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BENNETT, STATE: DELAWARE, YEAR: 1961, SECOND-ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

DEODTIC LATITUDE	DEODTIC LONGITUDE	ELEVATION SCALED	20-METERS FEET
39 18 04.4875	75 45 38.5158		

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	402,637.54	474,089.08
MD	1900	1,150,709.74	536,973.58

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  (CPD) OF FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT		DEODTIC AZIMUTH (from true)	PLANE AZIMUTH (from true)	CODE
BENNETT AZ HK		89 15 33.0	89 28 38	0700
BENNETT AZ HK		89 15 33.0	88 28 53	1900

POSITION DETERMINED BY TRAVERSE FROM STATION BENNETT AZ HK



## HORIZONTAL CONTROL DATA

By the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BETHEL RM 3 STATE: Delaware COUNTY: New Castle

NOTE	NAME OF PARTY: R. W. Tomlinson	YEAR: 1961	HEIGHT OF TELESCOPE ABOVE SIGHT BAR: 35.44 METERS	HEIGHT OF LIGHT ABOVE SIGHT BAR: 39.12 METERS	DISTANCE	BEARING	OBJECT	DIRECTION
118	Surface station mark.							
119	Underground station mark							
116	Reference Monument No. 74 (traverse)				165.11	N	Williams 1934	0 00 00.00
115	Reference Mark No. 2				50.3264	N	Boundary Monument No. 74	32 04 57.9
114	Azimuth Mark				161.16	N	Reference Mark No. 2	32 45 18.8
113	Azimuth Mark				Approx. 0.15 mile	N	Azimuth Mark	296 18 56.3
112	Azimuth Mark				128.103	NW	BETHEL (USE) 1934	507 59 40.6

The station is located in the southeast corner of the Bethel Cemetery, 1.6 miles east of Chesapeake City, 2.8 miles west of State Highway 896 and about 20 yards south of the Chesapeake-Delaware Canal.

To reach the station from the post office in Chesapeake City, go easterly along the south shore of the canal for 0.5 mile to a T-road junction, turn right and continue east on a concrete road for 1.5 mile to a crossroad, turn left and go north on a macadam road for 0.8 mile to the entrance of the Bethel Cemetery, turn right and go southeast across the Cemetery for 0.2 mile to the southeast corner of the Cemetery and the station.

The station mark is a standard reference mark disk stamped BETHEL NO. 3 1961, set in top of a square concrete monument which is flush with the ground surface. It is 2.4 feet north of a standard metal witness post located in the east end west fence line and 20.2 feet west of the southeast fence corner.

BETHEL U.S.E. 1934 is a standard U.S. Corps of Engineer's Triangulation disk stamped BETHEL USCORP NO 4734 1934, set in top of a square concrete monument which is flush with the ground surface. It is 18.6 meters south of the Quack and Moody Tomstones, 32.5 meters south-southeast of the Kershaw Tomstones and 20.90 meters southwest of Kern Tomstones.

Reference mark 2 is a standard U.S. Corps of Engineer's Triangulation disk stamped BETHEL USC of E NO 4734 NO 2 1934, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 6 inches west-northwest of the waven fence line, 5.5 feet south-southeast of the north end of the waven fence line and 3.9 feet south of Boundary Monument No. 74.

Azimuth mark is a standard disk stamped BETHEL 1961, set in top of a square concrete monument which projects 4 inches above the ground surface. It is 1.0 foot north of the east end west fence line and 88.6 feet south of the southwest corner of Ford Tomstones.

Boundary Monument No. 74 is a 11" X 11" limestone boulder bearing the coat of arms projection about 30 inches above the ground surface. It is located in the east fence line around the Bethel Cemetery, at the south end of an evergreen hedge row and at the north end of a waven fence line. The monument is leaning considerable east-southeast.

NAME OF STATION: BETHEL RM 3

STATE: DELAWARE

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 31 58.4387	ELEVATION:	15.1 METERS
GEODETIC LONGITUDE	75 46 46.0882		50 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	397,664.76	558,487.67
MD	1900	1,144,270.21	621,271.99

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \approx \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK	75 41 54.2	75 55 46	0700
AZIMUTH MARK	75 41 54.2	74 55 56	1900



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## DESCRIPTION OF TRIANGULATION STATION

## ADJUSTED HORIZONTAL CONTROL DATA

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
Form 1228  
Rev. 4-74-74

NAME OF STATION: BOHEMIA

STATE: Maryland

COUNTY: Cecil

NAME OF STATION: BOHEMIA

STATE: MARYLAND

YEAR: 1961

SECOND-ORDER

CHIEF OF PARTY: R. W. Tomlinson / YEAR: 1961 /  
HEIGHT OF LIGHT ABOVE STATION MARK: 31.65 METERS /  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

Described by: Marvin W. Larabee

NOTE:	OBJECT	BEARING	DISTANCE	DIRECTION
1a / 7a	MANLOVE 1934 Reference Mark 1 Desc Boundary Monument 11a: Reference Mark 2 11a: Reference Mark 3	E E SE S	94.99' 86.538' 79.44' 210.02'	00 00 00.0 224 29 18 224 55 17.6 287 07 15 318 25 57.1

The station is located about 4.0 miles southeast of Chesapeake City, Maryland and 3.5 miles northwest of Middletown, Delaware and on property owned by Mrs. Jaunita Formberger. It is 95.0 feet west of a field entrance, 31.0 feet northwest of a 10-inch locust tree, 17.0 feet northwest of a dim track field road and 5.3 feet south-southwest of a standard metal witness post and marker.

To reach the station from the junction of State Highway 299, 896 and Broad and Main Street in Middletown, Delaware; go west on Main Street and State Highway 299 for 0.2 mile to the junction of U.S. Highway 301; continue west on U. S. Highway 301 and State Highway 299 for 0.4 mile to a fork. Take the right hand fork and go northwest on a blacktop road for 3.0 miles to a fork at the Bohemia Mill Pond. Take the right hand fork and go north on a blacktop road for 0.85 mile to a fork and a house on the east side of the road. Turn right and go east on a field road along the south side of an east and west fence line that extends to the road on the south side of the house, for 0.25 mile to a large opening in the woods to other fields and the station as described.

The station mark; a standard disk stamped BOHEMIA 1961, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground.

Reference mark 1, a standard disk stamped BOHEMIA NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 94.0 feet east of a standard metal witness post and marker, 6.0 feet southwest of the center of a gate and field entrance, 1.7 feet south of a south gate post, 1.3 feet west of a north and south fence line and is about 6.0 feet lower than the station. Reference mark 2, a standard disk stamped BOHEMIA NO 2 1961, is set in top of a 10-inch square concrete monument which is flush with the surface of the ground. It is 83.7 feet south-southwest of the standard metal witness post and marker, 16.8 feet south-southwest of a twin-fork locust tree and about 14-inches lower than the station.

Reference mark 3, a standard disk stamped BOHEMIA NO 3 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 2.2 feet north of the standard metal witness post and marker and is about 8.0 feet higher than the station.

Boundary Monument No. 70, a 12-inch square stone monument with an unrecognizable coat of arms on the east and west side. Fused by concrete to the north side of the monument is an 18-inch long, 3-inch wide and 16-deep pyramidal shaped concrete monument bearing a brass, rectangular, plate inscribed with Indian Tribal Information, Chontank and Lenape Tribes, placed by the Cecil Historical Society. The monument projects about 17 inches above the surface of the ground and is 13.8 feet west of a north and south fence line, 13.0 feet south-southwest of the center of a gate and field entrance and 12.0 feet south of the centerline of a field road.

SOURCE: G-12731

GEODETIC LATITUDE	39 28 31.3046	ELEVATION	14.7 METERS 48 FEET
GEODETIC LONGITUDE	75 46 30.5394		

STATE COORDINATES (FPM)			
STATE & ZONE	CODE	X	Y
DE	0700	398,799.64	537,524.98
MD	1900	1,165,769.60	600,332.15

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \text{ICR} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
MANLOVE	49 26 24.8	49 40 05	0700
MANLOVE	49 26 24.8	48 40 17	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEANIC SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Form 585  
Rev. Aug 1964

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BOYCE

STATE: Maryland

COUNTY: Wicomico

CHIEF OF PARTY: R. W. Tomlinson

Year: 1962

Described by: Marvin W. Larabee

MEASUREMENTS

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.20 METERS

HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

NOTES	OBJECT	BEARING	DISTANCE	DIRECTION
1a Surface station mark, Under ground station mark				
BOYCE AZIMUTH MARK (geod. distance)				
11a Reference Mark 2		NW	31.59	00 00 00.0
11a Reference Mark 1		SSE	24.31	18 00 17.4
				223 15 14.5

The station is located about 1.5 miles northeast of Sharptown, 0.8 mile southeast of the small settlement of Galestown, on the north bank of the Nanticoke River and on property owned by Mr. Fred Boyce who lives at Rehoboth Beach, Delaware. To reach the station from Sharptown, Maryland, go north-northwest on State Highway 313 for 0.8 mile to a side road on the right, east, side of the highway. Turn right and go northeast on a blacktop road for 1.35 miles to a macadam, a crossroad in the village of Galestown. Turn right and go east on a macadam road, across a dam of a small lake for 0.15 mile to a fork. Take the right hand fork and go south and southeast on a sandy road for 0.55 mile to where the main traveled road turns sharp to the left and a farm driveway. Continue straight ahead, south on the farm drive-way for 0.05 mile to a fence corner on the left and a pole gate. Pass through the pole gate and go south along the east side of a north and south fence line for 0.05 mile to a dirt track road. Turn left and go east across a pasture on a dirt track road for 0.1 mile to a small bridge across a drainage ditch. Pass over the bridge, thence turn sharp right and go south on a dirt track road along the east side of the drainage ditch for 0.1 mile to the northwest corner of a timber and a woods road straight ahead. Continue straight ahead, south on the woods road for 0.05 mile to the rivers edge and an old wharf and the station as described.

Continue straight ahead, south, on the drive way for 0.1 mile to a fence corner about 100.0 feet south-southwest of the southwest corner of a large farm house and the azimuth mark about 90.0 feet west of the fence corner.

The station mark, a standard disk stamped BOYCE 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 6.0 feet north of the edge of the river and 4.1 feet east of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped BOYCE NO 1 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 28.7 feet east of a standard metal witness post and marker, 10.0 feet north of the edge of the river and about the same elevation as this station.

Reference mark 2, a standard disk stamped BOYCE NO 2 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 27.0 feet west of a standard metal witness post and marker, 7.0 feet north of the edge of the river, 2.0 feet north of a fence line and about the same elevation as the station.

The azimuth mark, a standard disk stamped BOYCE 1962, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 20.0 feet north-northeast of a 30-inch sycamore tree, 4.5 feet south of a standard metal witness post and marker and 4.5 feet south of an east and west fence line.

Boundary Monument No. 7 was not recovered and no traverse was made.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOYCE

STATE: MARYLAND

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

DEODETIC LATITUDE	DEODETIC LONGITUDE	ELEVATION-SCALED	2 METERS FEET
38 33 40.5243	75 42 13.3707		

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from north)	PLANE AZIMUTH (from south)	CODE
DE	0700	417,916.00	204,520.44	97 35 41.3	97 46 25	0700
MD	1900	1,170,661.55	267,723.23	97 35 41.3	96 46 52	1900

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta' \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	DEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
BOYCE AZ MK	97 35 41.3	97 46 25	0700
BOYCE AZ MK	97 35 41.3	96 46 52	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BOYCE

ESTABLISHED BY: L.A.L.

YEAR: 1974

STATE: Maryland

RECOVERED BY: C.L. Novak

YEAR: 1976

COUNTY: Wicomico

BENCH MARK ALSO ☐

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 1/2 miles northeast of Sharptown

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
AZIMUTH MARK (VG)	NW	238.0	00 00 00.00
RM 2	NW	31.59	18 00 57
BOUNDARY MONUMENT 7	E	152.340	11 41.3
RM 1	SSE	24.31	223 15 01

The station and all marks were recovered and found in good condition as previously described. The distances and directions to all marks were within close agreement with the previous observations. The Maryland-Delaware Boundary Monument number 7 was set at this date, see description thereof.

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

BURRS-BOUNDARY MONUMENT (Caroline County, Md., Kent County, Del., J.B.Jr., 1934).--This second-order station is on the Maryland-Delaware State line, at Burrsville, about 5 1/2 miles E of Denton, Maryland, on the property line of Mr. Leonard Vass in Delaware, and Mr. C.T. Harvey in Maryland. The boundary monument was replaced by a standard triangulation mark which projects about 14 inches above the surface of the ground, and is 11 inches square. The monument is 63 paces N along the fence from the N line of the barns, 16.50 meters S of an 18-inch elm tree that is in the NE angle of the intersection of the ditch that goes 1 meter W of the station, and an E-W drain ditch, the station is in the NW corner of the lot.

Surface, underground, reference, and azimuth marks are standard bronze disks set in concrete, as described in notes 1a, 7a, and 11a.

Projecting 6 inches above the ground, on land owned by Mrs. Howard Hopkins, 36 paces NNE of the NE corner of the barn, 26 paces E of a 2-inch gum tree.

Reference mark No. 2 is E of the station, projects 5 inches above ground, on the E side of the lot, about midway of the E side, 1 meter W of the fence.

Reference mark No. 3 is S of the station, projects 6 inches above ground, on the W side of a drain ditch that is between the two properties, on the Maryland side, on the E side of a cultivated field, about 30 paces N of the barn.

Reach from the courthouse in Denton, Maryland, go E along Market Street for 0.35 mile to Sixth Street. Turn left on Sixth Street and go 1.6 miles. Turn right on pavement at sign "Burrsville 5 miles." Go 5.0 miles to Maryland-Delaware State line sign in Burrsville. Go 45 yards E of the state line sign, and turn left between two large trees on the E side of the second house on the left. Go 55 yards along W side of fence on grass between fence and garden to the N end of the garden, from here go diagonally (NW) across the lot for 60 paces to the station.

A 90-foot tower necessary. DISTANCE

OBJECT DIRECTION  
DENTON 0°00'00"0  
R.M. 1 (Az. Mk.) 0.4 mile 172 13 35.7  
R.M. 2 29.613 meters 186 02 32  
R.M. 3 23.190 meters 283 32 30

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BURRS (BOUNDARY MONUMENT 30)

ESTABLISHED BY J.B. Jr. YEAR 1934 STATE Delaware-Maryland  
RECOVERED BY R.M. Tomlinson YEAR 1961 COUNTY Kent-Caroline

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts.  
The station mark, reference mark 1 (azimuth mark), reference mark 2 and 3 were recovered as described and found to be in good condition. Reference mark 1 (azimuth mark) is no longer visible from the station. It was destroyed. The station was not observed from due to water in the vicinity of the station mark. Reference mark 4, surface and subsurface mark was established and observed from.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BURRS BURY MON 30 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1934  
SOURCE G-12731  
SECOND ORDER

GEODETIC LATITUDE	38 53 42.1364	ELEVATION SCALED	17 METERS FEET
GEODETIC LONGITUDE	75 43 41.9948		

STATE COORDINATES (FZ71)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (From North)
DE	U700	411,289.99	326,105.90	- 0 11 45
MD	1900	1,161,929.50	389,169.64	+ 0 47 53

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta_0 \pm \alpha$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From North)	PLANE AZIMUTH * (From North)	CODE
AZ MK RM 1	253 05 02.7	253 16 47	0700
AZ MK RM 1	253 05 02.7	252 17 09	1900

The station is located in northeast section of Burrsville, crosses the State Line and on property owned by Mr. R. H. Steiford. Boundary Monument replaced by U.S. concrete mark with standard disk stamped BOUNDARY MONUMENT BURRS 1934, set in top of a square monument which projects about 5 inches above ground surface. It is 2.0 feet southeast of a metal witness post, 3.0 feet east of a small ditch, 35.0 feet south of a large ditch and 150 feet south of State Highway 317. A traverse connection was made from station BURRS RM 4 to BOUNDARY MONUMENT BURRS 1934 being a distance of 25.046 meters (82.172 feet).

OBJECT NOTE 1961 DISTANCE BEARINGS 1961 DIRECTIONS  
R.M. NO. 2 11a 97.22 ft. 29.632 m. (E) 0 00 00.00  
R.M. NO. 3 11a 75.05 ft. 23.180 m. (S) 97 25 39.3  
R.M. NO. 4 11a (82.17 ft) 25.046 m. (crav. X SSE) 117 22 59.9



## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Boat Aid Pin

NAME OF STATION: CARTER STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961

Described by Marvin W. Larabee

NOTES: 1. HEIGHT OF TELESCOPE ABOVE STATION MARK 35.99 METERS  
2. SURFACE STATION MARK, UNDERGROUND STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
BOHEMIA			
11a Reference mark 1	N 86.65°	26.410	0 00 00.0
Desc Boundary Monument	SSE 49.087°	14.962	09 30 05.3
11a Reference Mark 3	SSE 173.80°	52.975	150 56 51.8
11a Reference Mark 2	SW 89.36°	27.237	165 28 00.7
			245 04 23.2

The station is located about 3.0 miles north of Warwick, Maryland, 3.0 miles north-west of Middletown, Delaware and on property owned by Mr. H. B. Carter, who lives about 0.5 mile northeast of the station. It is 120.0 feet east of the centerline of a black-top road, 95.0 feet north of a woods road, 25.9 feet north-northeast of an 18-inch pine tree with a triangular blaze and 6.9 feet west of a standard metal witness post and marker.

To reach the station from the junction of State Highway 299, 896 and the Inter-section of Broad and Main Street in Middletown, Delaware: Go west on Main Street and State Highway 299 for 0.2 mile to the junction of U.S. Highway 301; continue west on State Highway 299 and U.S. Highway 301 for 0.4 mile to a side road on the northwest side of the highway. Turn right and go northwest on a blacktop road for 3.0 miles to a fork at the Bohemia Mills Pond. Take the left hand fork and go south on a blacktop road for 0.3 mile to a road into the woods on the left just before reaching a bridge. Turn left, east, into the woods, passing through a gate, for about 115.0 feet, thence north for about 95.0 feet to the station as described.

The station mark, a standard disk stamped CARTER 1961, is set in the top of a square concrete monument projecting about 2 inches above the surface of the ground. Reference mark 1, a standard disk stamped CARTER NO 1 1961, is set in the top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 111.0 feet north-northeast of an 18-inch pine tree with a triangular blaze and 86.5 feet north of the standard metal witness post and marker.

Reference mark 2, a standard disk stamped CARTER NO 2 1961, is set in the top of a 10-inch square concrete monument flush with the surface of the ground. It is 96.9 feet southwest of the standard metal witness post and marker. 65.4 feet east of the centerline of a blacktop road and 53.0 feet north of the centerline of the woods road.

Reference mark 3, a standard disk stamped CARTER NO 3 1961, is set in the top of a 10-inch square concrete monument which is about 2 inches below the surface of the ground. It is 87.4 feet south of the centerline of the woods road, 33.3 feet south of a 14-inch pine tree and 1.9 feet north of a standard metal witness post and marker.

Boundary Monument No. 69, is a 12-inch square stone monument with the letter M and P inscribed on the west and east side. It is at the east edge of a small clearing, 47.0 feet north of a woods road and 25.0 feet east of an 18-inch pine tree with a triangular blaze. The monument leans slightly to the southwest. A traverse connection was made from the monument to the station. The monument projects about 30 inches above the surface of the ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CARTER

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 27 39.3594	ELEVATION	6.6 METERS
GEODETIC LONGITUDE	75 46 25.5708		22 METERS

## STATE COORDINATES (FEET)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from north)
DE	0700	399,168.44	532,267.66	- 0 13 37
MD	1900	1,146,229.79	595,082.05	+ 0 46 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B (COS Δ) - 3. FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
BOHEMIA	175 45 37.0	175 59 14	0700
BOHEMIA	175 45 37.0	174 59 26	1900



# HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CHARLES STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962  
HEIGHT OF TELESCOPE ABOVE STATION MARK 28.80 METERS  
HEIGHT OF LIGHT ABOVE STATION MARK 31 METERS

NOTES	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
1b	Surface station mark				
7a	Underground station mark				
16a	OAK GROVE 1974				
11a	Azimuth mark	SSW	Approx. 0.18 mile		00 00 00.0
11a	Reference mark 1	NE	87.865	26.780	24 15 16.5
11a	Reference mark 2	SSE	76.62	23.332	224 19 52.3

The station is located about 6.0 miles west of Bridgeville, Delaware, 5.0 miles northeast of Federalsburg and on property owned by Mr. Charles Mitchell, who lives west-southwest across the road from the station.

To reach the station from the intersection of Main Street and Central Avenue in Federalsburg, Maryland, go east on State Highway 318, East Central Avenue, for 0.35 mile to the junction of State Highways 318 and 306. Take the left fork and go north-north-east on State Highway 306 for 4.2 miles to a Y-fork. Take the left fork, a gravelled road and go north-northeast on the gravelled road for 0.5 mile to powerline pole No. 61-110, a standard metal witness post and marker and the azimuth mark on the right, east, side of the gravelled road. Continue north-northeast on the gravelled road for 0.18 mile to the corner of the tall pine woods on the left. Turn left and go northeast on a dirt track woods road through small brush for 0.05 mile to a standard metal witness post and marker and the station.

The station mark, a standard disk stamped CHARLES 1962, is set in top of a 10-inch square concrete monument about 24 inches below the surface of the ground. It is 88.2 feet south-southwest of a standard metal witness post and marker, 77.3 feet north of another standard metal witness post and marker and 50.6 feet west of a 14-inch pine tree. Reference mark 1, a standard disk stamped CHARLES NO 1 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 69.2 feet north of a 14-inch pine tree and 1.3 feet west of a standard metal witness post and marker.

Reference mark 2, a standard disk stamped CHARLES NO 2 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 29.2 feet north-northeast of the northeast corner of a cultivated field, 6.6 feet south of a 14-inch oak tree and 1.3 feet west of a standard metal witness post and marker.

The azimuth mark, a standard disk stamped CHARLES 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 34.0 feet east of the centerline of a gravelled road, 2.0 feet north of powerline pole No. 61-110 and 1.0 feet north of a standard metal witness post and marker. Boundary Monument No. 20. The top portion was found lying in the woods about 66.0 feet east of the northeast corner of a cultivated field, in a low woods area, under water on this date, about 5.0 feet northeast of a large dead tree trunk that is about 30 inches high. The top portion of the monument is about 36 inches long; no evidence of the base part was located. It is a 12-inch square limestone monument with the Coast of Arms on two sides. The monument was not traversed to or intersected on this date.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CHARLES  
STATE: MARYLAND  
YEAR: 1962  
SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38° 45' 00.5453	ELEVATION	12.1 METERS
GEODETIC LONGITUDE	75° 43' 01.3955		40 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from north)
DE	0700	414,326.52	273,326.89	- 0 11 17
MD	1900	1,165,880.53	336,454.03	+ 0 48 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  FOR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	20	36	27.7	20	47
AZIMUTH MARK				45	0700
AZIMUTH MARK	20	36	27.7	19	48
				09	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CHARLES  
ESTABLISHED BY: L.A.I.  
RECOVERED BY: C.L. Novak  
YEAR: 1962  
STATE: Maryland  
COUNTY: Caroline  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5 miles northeast of Federalsburg  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
AZIMUTH MARK	SSW	(0.2 mile)	26.776	00 00:00
RM 1	NE	87.85	200.04	04 46
BOUNDARY MONUMENT 20	E	61.26	18.673	245 50 38.6
RM 2	SSE	76.61	23.350	319 59 57

The station and all marks were recovered and found in good condition as previously described.  
The Maryland-Delaware Boundary Monument number 20 was reset at this date, see description thereof.

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CHICOOSKY STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R.M. Tomlinson YEAR: 1961. Described by: V.D. Novak

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.

10.	Surface-station mark.	Underground-station mark	OBJECT	BEARING	DISTANCE	DIRECTION
11a.	R.M. 1		LAGANO	N	82.09	00 00 00.0
11b.	R.M. 2			NSW	25.022	08 55 01
16c.	Asimuth mark			N	89.62	254 52 49
				(Approx. 0.3 mile)		280 20 05.6

The station is located about 3 1/2 miles southeast of Elkton Maryland, 3.0 miles southwest of Glasgow Delaware and on property owned by Mr. Roman Chicoosky who gave permission.

To reach the station from the junction of U.S. Highway 40 and State Highway 213 which is about 0.5 mile south of the business district in Elkton, go southerly on State Highway 213 for 2.4 miles to a side road left, turn left and go easterly on asphalt road for 1.25 miles to a side road left, turn left and go northerly on asphalt road for 0.4 mile to a fence line, (continue northerly on asphalt road for 0.05 mile to the azimuth mark on the right.), turn right and follow fence line east for 0.3 mile to the station.

The station, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 3 inches above the surface of the ground, stamped "CHICOOSKY 1961". It is 21.5 feet northwest of a fence corner, 18.2 feet northwest of a standard metal witness post and marker, 17.5 feet north of a east-west fence line and 15.8 feet west-southwest of a 9-inch triangular blazed asseffras tree.

Reference mark 1, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 6 inches above the surface of the ground, stamped "CHICOOSKY NO 1 1961". It is 95.4 feet north of a fence corner, 88.6 feet north of a standard metal witness post and marker, 75.5 feet north of a 9-inch triangular blazed asseffras tree, 19.7 feet north of an 18-inch walnut tree and 2.0 feet west of a north-south fence line.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 6 inches above the surface of the ground, stamped "CHICOOSKY NO 2 1961". It is 106.8 feet west of a fence corner, 106.6 feet west of a standard metal witness post and marker, 106.0 feet west of a 9-inch triangular blazed asseffras tree and 3.2 feet north of a east-west fence line.

Asimuth mark, is a standard disk set in the top of a 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "CHICOOSKY 1961". It is 25.0 feet south of a driveway leading to Mr. Chicoosky home, 17.0 feet east of the approximate center of asphalt road, 6.0 feet south of a 30-inch walnut tree and 5.0 feet south of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CHICOOSKY

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: C-12731

GEODETIC LATITUDE	39 34 39.6880	ELEVATION	21.6 METERS
GEODETIC LONGITUDE	75 46 59.3805		71 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	θ (ORD. RI. ANGLE)
DE	0700	396,689.74	574,807.23	- 0 14 01
MD	1900	1,143,011.32	637,572.32	+ 0 45 49

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ (ORD. RI. FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	COORD
AZIMUTH MARK	98 32 23.8	98 46 24	0700
AZIMUTH MARK	98 32 23.8	97 46 34	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CHICOOSKY

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

YEAR: 1961

STATE: Md., -Del.

GENCH MARK ALSO

YEAR: 1976

COUNTY: Cecil-New Castle

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles northeast of Chesapeake City

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

WEIGHT OF LIGHT ABOVE STATION MARK

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION AT THE STATION				
OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
AZIMUTH MARK (VG)				
RM 1	W	(0.3 mile)	0	00' 00.00"
	N	82.11	25.025	188 12 13
BOUNDARY MONUMENT 77	E	(4.71)	1.436	167 52 43.3
RM 2	WSW	89.62	27.314	334 32 30

Distances and directions to azimuth mark, reference marks and prominent objects which can be seen from the ground at the station.

The station and all marks were recovered and found in good condition as previously described. The distances and directions to all objects were within close agreement with the previous observations.

The Maryland-Delaware Boundary Monument number 77 was set at this date, see description thereof.

HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. NATIONAL GEODETIC SURVEY  
CH-Rev. Aug. 1964

NAME OF STATION: COD ✓ STATE: Delaware COUNTY: SUSSEX  
CHIEF OF PARTY: R. W. Tomlinson ✓ YEAR: 1962 ✓ DESCRIBED BY: Martin W. Larabee ✓  
HEIGHT OF INSTRUMENT ABOVE STATION MARK 1.67 METERS ✓ HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS ✓  
1b Surface-station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION  
7a Underground-station mark

OBJECT	BEARING	DISTANCE	DIRECTION
SHARP 1934			
Desc. Boundary Monument No. 6 (traverse)	W	(158.98)	00 00 00.0
11b Reference Mark No. 2	NM	43.470	46 20 30.3
11b Reference Mark No. 1	SSE	41.970	73 59 02.8
16a Azimuth Mark	S	12.729	280 34 58.9
		Approx. 0.2 mile	313 56

The station is located about 7.0 miles west-southwest of Laurel, Delaware, 1.75 miles southeast of Galetstown, Maryland, 1.0 mile east of Sharptown, Maryland, on property owned by the Waller estate. The estate is being taken care of by Mrs. Mary Spicer.

To reach the station from the southeast end of the bridge over the Nanticoke River at the northeast edge of Sharptown; go southeast of State Highway 313 for 0.2 mile to the intersection of Water Street. Turn left and go northeast and east on Water Street and a blacktop road for 1.0 mile to a track road on the left, between two cultivated fields\*. Turn right and go south across a cultivated field for 0.05 mile to a 6-inch triangular blazed elm tree, at the northeast corner of a woods, a standard metal witness post and the azimuth mark. \*Turn left and go north on a field road for 0.1 mile to the southeast corner of a woods; continue north on a track road along the east edge of woods for 0.05 mile to Boundary Monument No. 6. Turn right and go east along the south edge of woods for about 150.0 feet to the corner of woods and corner of cultivated field, two triangular blazed trees and the station.

The station mark, a standard disk stamped COD 1962, is set in top of a 12-inch concrete cylinder about 2 inches below the surface of the ground. It is 147.0 feet east of the northeast corner of a cultivated field, 44.3 feet south of a 12-inch triangular blazed pine tree, 22.6 feet southeast of the northeast corner of a cultivated field, 14.8 feet west of a 5-inch triangular blazed pine tree and 3.5 feet west of the west edge of timber. ✓

Reference mark 1, a standard disk stamped COD NO 1 1962, is set in top of a 12-inch concrete cylinder about 1 inch below the surface of the ground. It is 86.0 feet south of a 12-inch triangular blazed pine tree, 65.0 feet south of the northeast corner of a cultivated field, 16.0 feet southwest of a 10-inch triangular blazed pine tree, set at the east edge of a cultivated field and about 6 inches above the station.

Reference mark 2, a standard disk stamped COD NO 2 1962, is set in top of a 12-inch concrete cylinder flush with the surface of the ground. It is 93.0 feet east of the northeast corner of field, 28.0 feet west of the northeast corner of field, 25.7 feet west-southwest of a 12-inch triangular blazed pine tree, 2.0 feet south of the south edge of timber and about the same elevation as the station. ✓

The azimuth mark, a standard disk stamped COD 1962, is set in top of a 10-inch square concrete monument projecting about 5 inches above the surface of the ground. It is 20.0 feet east-southeast of the northwest corner of timber, 13.0 feet east of a 6-inch triangular blazed elm tree, 2.5 feet west of a standard metal witness post and marker and set at the north edge of a timber and southedge of a cultivated field.

Boundary Monument No. 6, a 12-inch square granite stone, chipped on all four corners near the top, with the letter M cut in on its west side and the letter P on the east side. The monument is plumb in general good condition and projects about 24-inches above the surface of the ground. It is 33.0 feet west of the northeast corner of field. A small cross was inscribed in its top and cap.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: COD ✓ STATE: Delaware YEAR: 1962 SECOND-ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION SCALED	5 METERS FEET
38 32 48.8064	75 42 01.0553		

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	418,878.11	199,285.46
ND	1900	1,171,714.15	262,505.89

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK		6 51 23.4	7 01 00	0700
		6 51 23.4	6 02 27	1900

POSITION DETERMINED BY TRAVERSE FROM STATION SHARP



## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: COLDWELL  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1961  
STATE: Delaware  
COUNTY: New Castle  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles east of Sassafras  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: COLDWELL  
STATE: DELAWARE  
YEAR: 1961  
SOURCE: G-12731

SECOND - CONTINUED

OBJECT	BEARING	FEET	METERS	DIRECTION
AZIMUTH MARK	S	(0.2 mile)	0	00,00
BOUNDARY MONUMENT	N	97.91	29.842	183 23 15.4
BOUNDARY MONUMENT	N	98.11	29.905	186 43 08.4
RM 1	NE	90.40	27.554	208 37 12
RM 2	SE	87.70	26.733	136 03 11

The station surface mark was found destroyed. The sub-surface mark was found in good condition. A new surface mark was set at this date. Reference marks one and two were found in good condition. However, reference mark one appeared to have been hit at one time. It is now solid and in good condition. A longer distance of 0.16 foot or 0.048 meter was noted to reference mark one. A shorter distance of 0.02 foot or 0.004 meter was noted to reference mark two. The angle between the azimuth mark and reference mark one was found to be 4 minutes and 11 seconds larger than the 1961 angle. All other distances and directions were within close agreement with the 1961 observations.

A complete new description of the station follows.  
The station is located about 2 airline miles east of Sassafras, 4 miles west-southwest of Towson, and on property owned by Mr. Harri Butten, Rt. 2, Towson, Delaware.

To reach from the main crossroads in Sassafras, go east on Coldwell Road for 2.2 miles to a side road left about 50 feet before reaching a crossroads. Turn left and go north on State Line Road for 0.3 mile to the azimuth mark on the right. Continue north on State Line Road for 0.15 mile to the station on the left.

The station surface mark is a standard disk stamped COLDWELL 1961 1976, set in a 14-inch round concrete monument which is 14-inches below the surface. The sub-surface disk is stamped COLDWELL 1961 and set in an 8-inch mass of concrete which is 42-inches below the surface. They are 91 feet southwest of a witness post, 88 feet northwest of a witness post, 40.5 feet west-northwest of a powerline pole numbered J89112, and 27 feet west of the center of State Line Road.

Reference mark one is a standard disk stamped COLDWELL NO. 2 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 91 feet north of powerline pole numbered J89112, 14 feet east of the center of State Line Road, and 2 feet north of a witness post.

Reference mark two is a standard disk stamped COLDWELL NO. 2 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 69 feet south of powerline pole numbered J89112, 14 feet east of the center of State Line Road, and 1 foot south of a witness post.

GEODETIC LATITUDE	39 22 24.6443	ELEVATION	20.3 METERS
GEODETIC LONGITUDE	75 45 59.8402		67 FEET

STATE & ZONE	CODE	X	Y	# OF $\Delta$ & ANGLE
DE	0700	401,063.09	500,417.38	- 0 13 19
MD	1900	1,148,677.95	563,269.92	+ 0 46 27

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OF  $\Delta$  & FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	CODE
AZIMUTH MARK	353 21 19.0	353 34 38	0700
AZIMUTH MARK	353 21 19.0	352 34 52	1900

The azimuth mark is a standard disk stamped COLDWELL 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 109 feet south of a powerline pole numbered J89108, 50 feet north of a private drive, 46 feet south of a telephone cable marker numbered MS 203A, and 15 feet east of the center of State Line Road.

The Maryland-Delaware Boundary Monument numbered 63 was reset at this date, see description thereof.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.



# HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

### DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: COLUMBIA - STATE: Maryland COUNTY: Wicomico  
CHIEF OF PARTY: R.W. Tomlinson - YEAR: 1962 - Described by: V.D. Novak.  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
1a Surface station mark, DISTANCES AND OBSERVATIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
COOPER RM 4		feet	meters
11a Reference mark 1	SSW	81.69	24,899
11b Reference mark 3	SW	200.916	61,240
11c Reference mark 2	WNW	81.35	24,789
11d Boundary Monument # 3 (Traverse)	E	(81.149)	25,344
			351 35 40.4

The station is located about 7 1/2 miles southwest of Laurel, Delaware, 4 1/2 miles north-northwest of Dalestown, Maryland, 3.0 miles south-southeast of Sherptown, Maryland and on property owned by Mr. E. O. Wheatley at 407 Anne Street in Salisbury, Maryland his phone number is PI 2-1111 who gave permission.

To reach the station from the crossroads in Sherptown, Maryland go southeasterly on State Highway 348 for 1.7 miles to the Maryland-Delaware State Line, continue east on Delaware State Highway 24 for 1.0 mile to a crossroad, turn right and go southerly on paved road for 1.5 miles to a crossroad at the Columbia Church and Store, turn right and go westerly on asphalt road for 1.0 mile to a fork and Delaware-Maryland State Line, turn right and go north on dirt road for 0.2 mile to a fork, take right fork and go northwesterly on dirt road for 0.2 mile to a crossroad, turn right and go east on dirt road for 0.2 mile to the farm house of Mr. Neymon Brown house, continue around the left side of the house for 0.15 mile to a dim woods road right, turn right and follow woods road for 1/60 paces to reference mark 3, here peak north east for 200.916 feet to the station.

Station is a standard disk set in the top of 10 x 10 inch concrete monument which projects about 2 inches above the surface of the ground, stamped COLUMBIA 1962. There was not a underground mark set at this station due to water in the mark hole. It is 24.6 feet southeast of a 10-inch pine tree and 2.5 feet southwest of a standard metal witness post and marker.

Reference mark 1 is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 4 inches above the surface of the ground, stamped COLUMBIA NO 1 1962. It is 83.9 feet south of a standard metal witness post and marker and 4.0 feet west of a 8-inch oak tree.

Reference mark 2 is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 3 inches above the surface of the ground, stamped COLUMBIA NO 2 1962. It is 81.8 feet west-northwest of a standard metal witness post and marker, 17.0 feet north of a 10-inch pine tree and 7.0 feet east of a 8-inch oak tree.

Reference mark 3 is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 3 inches above the surface of the ground, stamped COLUMBIA NO 3 1962. It is 15.5 feet south of a track road and 1.4 feet north of a standard metal witness post and marker.

Boundary Monument # 3 is a 12 x 12 inch square granite stone which projects about 24 inches above the surface of the ground. It has the letter M on the west side of the monument and the letter P on the east side. It is leaning to the south a little. It was traversed to a cross was inscribed on the top. It is 81.2 feet east of a standard metal witness post and marker, 7.8 feet north of a 10-inch oak tree and 6.5 feet south of a 10-inch oak tree.

NAME OF STATION COLUMBIA

STATE MARYLAND

YEAR 1962

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	38 30 12.4312	ELEVATION	11.1 meters
GEODETIC LONGITUDE	75 41 51.7783		36 feet
STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	419,566.83	183,463.88
MD	1900	1,172,676.76	246,699.15
			0 10 30
			+ 0 49 03

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
COOPER RM 4	274 15 59.0	274 26 29	0700
COOPER RM 4	274 15 59.0	273 26 57	1900

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION COON

STATE MARYLAND

YEAR 1962

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	38 48 28.4868	ELEVATION	16.9 METERS
GEODETIC LONGITUDE	75 43 17.7454		6.9 FEET

STATE COORDINATES (1948)			
STATE & ZONE	CONF	X	Y
DE	0700	413,101.32	294,368.01
MD	1900	1,164,290.82	357,669.64
			+ 0 11 28
			+ 0 48 09

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho$  FOR  $\Delta$   $\rho$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
DENTON RM 4	134 36 22.8	134 47 51	0700
DENTON RM 4	134 36 22.8	133 48 14	1900

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY "NA" FINAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: COON

STATE: Maryland

COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson

Year: 1962

Described by: Marvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 31.840 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 34 METERS.

1a	Surface station mark	DISTANCES AND DIRECTIONS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	DISTANCE	BEARING	MARKS	DIRECTION
7a	Underground station mark					
	DENTON RM 4					
	Desq. Boundary Monument	24 (traverse)		E (48.60)	14.813	00 00 00.0
	11a Reference Mark 1			E	20.715	124 13 17.5
	11a Reference Mark 2			SSW	67.96	130 27 30.8
	11a Reference Mark 3			NW	52.31	15.945
					130.08	235 38 20.0
						39.652
						344 35 01.1

The station is located in a low, swamp area, in a dense timber, on property owned by Mr. Joseph Barley; located about 8.0 miles southeast of Denton, Maryland, 8.0 miles northwest of Bridgeville, Delaware and about 0.5 mile north of the Fountainville Interstate Fire Tower.

To reach the station from the post office in Denton, Maryland: go north-northeast on State Highway 404 for 8.4 miles to a crossroads, this is about 0.4 mile before reaching the Fire Tower at the State Line. Turn left and go north-northeast on a gravelled road for 0.4 mile to a fence corner and a track field road on the right, east side of the road. Turn right and go east along the north side of a fence line for about 200.0 feet to the edge of timber, thence turn left and go north along the west side of timberline for about 0.05 mile to the northeast corner of timber, thence turn right and go east along the north side of timber for 0.15 mile to the southeast corner of a cultivated field and a fence corner and a track timber road. Pass through the gate and continue east on the woods road for 0.15 mile to a standard metal witness post and marker, Boundary Monument No. 24 and the station.

The station mark, a standard disk stamped COON 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 5.5 feet west of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped COON NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 5 inches above the surface of the ground. It is 63.0 feet east of a standard metal witness post and marker and about the same elevation as the station.

Reference mark 2, a standard disk stamped COON NO 2 1961, is set in the top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 51.4 feet south-southwest of a standard metal witness post and marker and about the same elevation as the station.

Reference mark 3, a standard disk stamped COON 1961, is set in the top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 3.1 feet southeast of a standard metal witness post and marker and about the same elevation as the station.

Boundary Monument No. 24, a 12-inch square limestone monument projecting about 30 inches and leans slightly to the northwest, with the letter M cut in on its west side and P on its east side, a small cross was inscribed in its top and center for traverse purpose on this date. It is 120.0 feet southeast of a 24-inch dead tree, 90.0 feet east of a 30-inch dead tree and 63.9 feet east of a standard metal witness post and marker.

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
July 1977

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DELA STATE: Delaware COUNTY: Sussex

CHIEF OF PARTY: R.W. Tomlinson	YEAR: 1962	DESCRIBED BY: E.G. Kaspari
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.0 METERS	HEIGHT OF LIGHT ABOVE STATION MARK 2.0 METERS	
1a. Surface station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
7a. Under-ground station mark		
OBJECT	BEARING	DISTANCE
WHITE 1934 (good distance)		1659.260
DODD		1571.790
Reference Mark 1	S	36.475
11a. Azimuth Mark	N	approx 0.45 miles
11a. Reference Mark 1	N	11.165
		178 46 56.3

Station is located about 2.0 miles south of the small village of Reliance, 3.0 miles north-northeast of the small village of Galetstown, and about 5.5 miles southwest of Seaford Delaware. On the right-of-way of State Line road.

To reach the station from the intersection of main street and central ave. in Federalsburg Maryland, go east on central ave. for 0.2 mile to a side road right, turn right, go south for 1.7 mile to where the highway turns sharp to the right, continue southeasterly on State Highway 577 for 3.65 miles to the small village of Reliance, thence go south on the State Line road for 1.6 to azimuth on the right, continue on the State line road for 0.5 mile to the station on the left.

Station Mark, a standard disk stamped DELA 1962, set in the top of a 10 X 10 inch square concrete monument, projecting flush with the ground surface. It is 3.4 feet south-west of a standard metal witness post; 17.6 feet south of powerline-pole number 118-49; 27.8 feet east of center of State line road; 24.0 feet west of edge of woods.

Reference Mark No. 1, a standard disk stamped DELA No. 1 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 27.5 feet north of a standard metal witness post; 19.4 feet north-northeast of powerline-pole number 118-49; 29.0 feet east of center of State line road; 23.3 feet west of edge of woods.

Reference Mark No. 2, a standard disk stamped DELA No. 2 1962, set in the top of a 10 X 10 inch square concrete monument, that is 2 inches below the ground surface. It is 38.7 feet south of a standard metal witness post; 27.7 feet east of center of State line road; 30.0 feet west of edge of woods; 53.7 feet south of powerline-pole number 118-49.

Azimuth Mark, a standard disk stamped DELA 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 4.6 feet southeast of a standard metal witness post; 25.8 feet west of center of State line road; 7.0 feet east-southeast of a 12 inch pine tree.

Boundary Monument No. 10, reported to be two feet or more under center of hard surfaced road. Reported to be prone with top to south and Calvert arms to west.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DELA STATE: Delaware YEAR: 1962 SECOND ORDER

SOURCE G-12731

ODIC LATITUDE	38 36 19.3421	ELEVATION	9.9 METERS
ODIC LONGITUDE	75 42 19.1779		32 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	$\theta$ FOR $\Delta$ $\theta$ ANGLE
DE	0700	417,505.20	220,588.47	- 0 10 48
MD	1900	1,169,972.48	283,781.09	+ 0 48 45

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  FOR  $\Delta$  BY FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	ODIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	CODE
AZIMUTH MARK	174 43 54.5	174 56 43	0700
AZIMUTH MARK	174 43 54.5	173 55 09	1900

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DELA STATE: Delaware YEAR: 1962 BENCH MARK ALSO ☐  
ESTABLISHED BY: L.A.L. RECOVERED BY: C.L. Novak COUNTY: Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles south of Reliance  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
DODD 1962	N	(1 mile)	11.119	0 00' 00"
RM 2	S	36.48	11.119	181 19 18
BOUNDARY MONUMENT 10	W	(30.30)	9.234	270 38 32.0
RM 1	N	36.63	11.165	359 59 41

The station and all marks were recovered and found in good condition as previously described. The azimuth mark is not visible from the ground without clearing several large trees. Triangulation Station DODD was used as an azimuth at this date. The distances and direction to both reference marks agreed with the previous observations.

The Maryland-Delaware Boundary Monument number 10 was set below a manhole just west of this station at this date, see description thereof.

Described description:







# HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DEVORE - STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson. YEAR: 1962 - Described by Marvin W. Larabee -  
HEIGHT OF TELESCOPE ABOVE STATION MARK 31.40 METERS - HEIGHT OF LIGHT ABOVE STATION MARK 34.00 METERS.  
DESC: Surface station mark, DISTANCES TO ADJUTANT MARKS, REFERENCE MARKS AND PROMINENT OBJECTS  
WHICH CAN BE SEEN FROM THE GROUP AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
COON				0 00 00.0
Desc. Reference Mark No 1	NE	204.93	62.460	48 08 00.1
Desc. Reference Mark No 2	ENE	71.66	21.841	77 12 05.3
Desc. Boundary Monument No. 22 (traverse)	ESE	(115.09)	35.081	116 00 02.7
Desc. Reference Mark No. 2	SSW	57.85	17.633	208 34 54.9

The station is located about 6.5 miles northeast of Federalburg, Maryland, 6.5 miles west-northwest of Bridgeville, Delaware, in a dense woods and brush and on property owned by Miss Sadie DeVore.

To reach the station from the Railroad Station in Bridgeville, Delaware; go northwest on State Highway 404 for 6.5 miles to a crossroad, this is about 1.05 mile southeast of the Fountainville, Interstate Lookout Tower. Turn left and go southwest on a blacktop road for 1.05 mile to a narrow graded road on the right, west side of the blacktop road. Turn right and go west on the narrow graded road for 0.45 mile to a driveway on the left, south side of the road. Turn left and go south on driveway for about 200.0 feet to the northeast corner of field, just after passing a trailer house residence on the left. Continue south on a dirt track field road for 0.25 mile to the southeast corner of a cultivated field and northwest corner of timber and a track woods road. Continue south-west on the track woods road for 0.2 mile to a deep hole off the woods road to the left, appears to have been an old well at one time and a 10-inch triangular blazed pine tree and a 10-inch track woods road on the left. Turn left and go south on the dirt track woods road for 0.1 mile to a 10-inch triangular blazed oak tree, a standard metal witness post and the station.

The station mark, a standard disk stamped DEVORE 1962, is secured to the top of a driven into the ground and reinforced by concrete projecting about 3 inches above the surface of the ground. It is 30.0 feet south of a 10-inch triangular blazed oak tree, 22.9 feet east of a three-trunked oak tree and 5.8 feet northwest of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped DEVORE NO 1 1962, is secured to the top of a 5/8 inch copper rod, driven into the ground and reinforced by concrete, projecting about 3 inches above the surface of the ground. It is 74.7 feet east of a standard metal witness post and marker, 54.6 feet east of a 10-inch triangular blazed white oak tree and 3.3 feet northwest of a 10-inch white oak tree and about station elevation.

Reference mark 2, a standard disk stamped DEVORE NO 2 1962, secured to the top of a 5/8 inch copper rod, driven into the ground and reinforced by concrete, projecting about 3 inches above the surface of the ground. It is 59.9 feet south-southwest of a standard metal witness post and marker, 10.0 feet east of a 10-inch white oak tree.

Reference mark 3, a standard disk stamped DEVORE NO 3 1962, is secured to the top of a 5/8 inch copper rod driven into the ground and reinforced by concrete, projecting about 3 inches above the surface of the ground. It is 10.3 feet south of the centerline of woods road, 10.2 feet east-southeast of a 12-inch white oak tree, 1.6 feet east of a standard metal witness post and marker and about station elevation.

Boundary Monument No 22, a 12-inch square granite stone projecting about 30 inches above the surface of the ground, with the letter M cut in on its west side and P on the east side, a small cross was inscribed in the top and center for traverse purpose. The monument is in good condition. It is 119.7 feet southwest of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION DEVORE  
STATE MARYLAND  
YEAR 1962  
SOURCE G-12731

OF DEUTIC LATITUDE	38 46 44.3892	ELEVATION	12.8 METERS
OF DEUTIC LONGITUDE	75 43 10.1448		42 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	413,668.12	283,834.73
MD	1900	1,165,040.12	346,948.33
			- 0 11 23
			+ 0 48 13

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  (OD)  $\Delta$   $\beta$  FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	DEUTIC AZIMUTH (from mark)		PLANE AZIMUTH		CODE
	0	1	0	1	
COON	176 43 48.4	176 43 48.4	176 55 11	176 55 35	0700
COON	176 43 48.4	176 43 48.4	175 55 35	175 55 35	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION DODD STATE: Maryland COUNTY: Dorchester

CHIEF OF PARTY: R. X. Tomlinson Year: 1962 Described by: R. L. Wright -

NOTE: 1. HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS. 2. SURFACE STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
1a	RELINCE (geod. distance) (V.O.)		1644.472	0 00	00.00
	DELA (geod. distance) (V.O.)		1577.790	178 45	15.05
11a	Reference Mark 1	E	53.91	68 28	37.3
11a	Reference Mark 2	S	57.383	179 10	14.9

The station is located along the west side of a macadam road, 1.0 mile south of the small village of Reliance, 5 1/2 miles west-southwest of Seaford, 6 1/2 miles southwest of Federalsburg and on State Highway property.

To reach the station from the intersection of Main Street and Central Avenue in Federalsburg, go east on Central Avenue for 0.2 mile to a side street right, (State Highway 313), turn right and go south on Highway 313 for 1.7 miles to where the Highway turns sharp to the right, continue southeasterly on State Highway 577 for 3.65 miles to a crossroad in the small village of Reliance, turn left for about 150.0 feet and then turn right and go south on the State Line road for 1.05 miles to a culvert on the right and the station on the right as described.

The station mark is a standard disk stamped DODD 1961, set in top of a square concrete monument which is flush with the ground surface. It is 4.0 feet south-northeast of a standard metal witness post and marker, 10.0 feet south of the west end of a culvert and 26.0 feet west of the approximate center of the macadam road.

Reference mark 1 is a standard disk stamped DODD NO. 1 1961, set in top of a square concrete monument which is flush with the ground surface. It is 28.0 feet east of the approximate center of the macadam road, 11.0 feet south-southeast of the east end of the culvert and 55.0 feet east of the witness.

Reference mark 2 is a standard disk stamped DODD NO. 2 1961, set in top of a square concrete monument which is 1 inch below the ground surface. It is 25.0 feet west of the approximate center of the macadam road, 61.0 feet south of the witness post and 67.6 feet south of the west end of the culvert.

Boundary Monument No. 11 is assumed to be in Federalsburg as it had been reported lying in the ditch for sometime and then hauled to Federalsburg by a local farmer.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION DODD

STATE MARYLAND

YEAR 1962

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	12.7 METERS
38 37 09.7286	75 42 23.8664		42 FEET

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	417,149.10	225,686.95
MD	1900	1,169,528.12	288,872.41

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S 1000 D. FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from true)	PLANE AZIMUTH (from true)	CODE
RELINCE	177 04 12.9	177 15 06	0700
RELINCE	177 04 12.9	176 15 31	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DODD

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 1/4 miles south of Reliance

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

WEIGHT OF LIGHT ABOVE STATION MARK FEET.

YEAR: 1962 STATE: Maryland

YEAR: 1976 COUNTY: Dorchester

BENCH MARK ALSO ☐

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RELINCE 1962	N (1 mile)			0 00 00.00
RM 1	E	53.91	16.431	88 29 06
BOUNDARY MONUMENT 11	E	26.62	8.113	89 23 39.1
RM 2	S	57.39	17.491	179 10 17

The station and all marks were recovered and found in good condition as previously described. The distances and directions to all objects checked the previous observations.

The Maryland-Delaware Boundary Monument number 11 was set below a manhole in the center of State Line Road at this date, see description thereof.

# HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Form 92a  
Rev. Aug. 1968

NAME OF STATION: DUNNING

STATE: Delaware

COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson  
YEAR: 1961  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 30.90 METERS  
HEIGHT OF LIGHT ABOVE STATION MARK: 33 METERS  
1a Surface station mark, Under ground station mark  
DISTANCES AND DIRECTIONS TO A STATION MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
PEARSONS			
16a Azimuth mark	INE	Approx. 0.4 mile	00 00 00.0
11a Reference mark 1	NE	23.371	31 18 33.4
Boundary monument	NE	76.63	56 04 28.6
11a Reference mark 2	NE	216.863	251 06 45.0
	NE	76.30	23.257 291 42 20.0

The station is located about 5.0 miles southeast of Millington, Maryland and 5.0 miles west of Kenton, Delaware. In dense woods and on property owned by Mr. R. Dunning. To reach the station from the crossroads in Sudlersville; go easterly on State Highway 300 for 3.0 miles to a side road on the left, north, side of the highway. Turn right and go north and northeast on a gravelled road for 0.9 miles to a crossroad. Continue northeast on a blacktop road for 2.7 miles to a farm road on the right hand side of the road. Turn right and go east on the gravelled farm road for 0.15 mile to a board gate at the northeast corner of farm house. Pass through the board gate, turn right and go through the barn lot, passing to the west side of barn and implement shed, to a gate at the southwest corner of barn lot. Pass through the gate and go east down a farm lane for 0.15 mile to the west edge of pasture at the end of the lane. Turn south on a dirt track road across pasture land and go 0.35 mile to the southeast corner of pasture and edge of timber, a standard metal witness post and the station.

To reach the azimuth mark from the station: go north-northeast across pasture land for 0.4 mile to the southwest corner of timber and the mark as described. The station mark, a standard disk stamped DUNNING 1961, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 19.9 feet northwest of a northeast and southwest fence line, 12.2 feet north-northwest of a standard metal witness post and marker and 12.0 feet east-northeast of the southwest corner of pasture land and edge of timber.

Reference mark 1, a standard disk stamped DUNNING NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 87.3 feet east-northeast of the southwest corner of pasture field, 78.6 feet north-east of a standard metal witness post and marker, 8.0 feet northwest of a northeast and southwest fence line and is about 16 inches higher than the station.

Reference mark 2, a standard disk stamped DUNNING NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 5 inches above the surface of the ground. It is 87.0 feet west-southwest of a standard metal witness post and marker, 70.0 feet northwest of the southwest corner of pasture, 30.0 feet west-southwest of the west edge of pasture and is about 16 inches higher than the station.

The azimuth mark, a standard disk stamped DUNNING 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 9.6 feet east-southeast of a southeast fence corner, 5.7 feet east-southeast of a standard metal witness post and marker and 3.6 feet south-southeast of a fence line.

Boundary Monument No. 52, a 12-inch square stone projecting about 32 inches above the surface of the ground with the letter M inscribed on the west side and F on the east side. The monument was found lying prone position. It was plumbbed and intersected with a small cross etched in its top and center.

Traversed with a non-standardized tape because monument knocked over.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DUNNING

STATE: DELAWARE

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 12 51.9129	ELEVATION	16.3 METERS
GEODETIC LONGITUDE	75 45 11.1126		53 FEET

STATE COORDINATES (FPM)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from south)
DE	0700	404,674.28	462,456.07	0 12 46
MD	1900	1,153,295.68	505,381.80	4 0 46 57

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$  OR  $\theta + \Delta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from south)	CODE
AZIMUTH MARK	205 39 47.4	205 52 33	0700
AZIMUTH MARK	205 39 47.4	204 52 50	1900



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: EHERLE

STATE: Maryland

COUNTY: Cecil

NAME OF STATION: EHERLE

CHIEF OF PARTY: R. W. Tomlinson

Described by: R. L. Wright

YEAR: 1961

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 51 METERS HEIGHT OF LIGHT ABOVE STATION MARK 34 METERS

16 Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE feet	DIRECTION
GRAYS HILL 2 1959			
BOUNDARY MONUMENT 76 (traverse)		78.88	0 00 00.00
11a Reference Mark 1	SSW	24.044	71 40 08.1
11a Reference Mark 2	WNW	76.56	209 25 57.2
11a Reference Mark 3	NNW	82.88	297 59 15.3
		125.260	350 54 56.6
		166.991	

The station is located in a heavily wooded area along the Delaware and Maryland State Line, 3 1/2 miles northeast of North Chesapeake City, 3 3/4 miles southwest of Glasgow, 4 1/4 miles southeast of Elkton and on property owned by Mr. Alphons J. Emerle.

To reach the station from the junction of U.S. Highway 40 and 213 about 1/2 mile south of Elkton, go south on U.S. Highway 213 for 2.5 miles to a crossroad, turn left, go east on a macadam road for 1.45 miles to a farm road right, just west of Mr. Emerle's house, turn right and go south on a farm road for 0.35 mile to a dim fork, continue straight ahead on the right fork for 0.3 mile to dim woods road right and the station located on the left.

The station mark, a standard disk stamped EHERLE 1961, is set in top of a square concrete monument which projects 2 inches above the ground surface. It is 2.0 foot southeast of a standard metal witness post and marker, 18.0 foot west-southwest of a 20-inch white oak tree and 27.0 foot east of the approximate center of a north and south woods road.

Reference mark 1, a standard disk stamped EHERLE NO 1 1961, is set in top of a square concrete monument which projects 3 inches above the ground surface. It is 9.5 foot west of the approximate center of the woods road, 77.1 foot south-southeast of the witness post and about 1.0 foot lower than the station mark.

Reference mark 2, a standard disk stamped EHERLE NO 2 1961, is set in top of a square concrete monument which projects 4 inches above the ground surface. It is 6.0 foot north of a dim woods road, 51.0 foot west-northwest of the approximate center of the north and south woods road, 80.9 foot west-northwest of the witness post and is about 1 1/2 foot higher than the station mark.

Reference mark 3, a standard disk stamped EHERLE NO 3 1961, is set in top of a square concrete monument which projects 4 inches above the ground surface. It is 1.2 foot west-southwest of a standard metal witness post and marker, 2.4 foot west-southwest of a north and south fence line and 8.0 foot east-northeast of the approximate center of the woods road.

Boundary Monument 76, is a 15-inch granite stone which projects about 3.0 foot above the ground surface. The point observer to and traverse to was the apex of the monument. It is 60.9 foot northeast of a 20-inch white oak tree, 79.0 foot northeast of a witness post and 100.0 foot east-northeast of the approximate center of a north and south woods road.

SOURCE G-12731

GEODETIC LATITUDE	39 33' 43.9676	ELEVATION	18.3 METERS
GEODETIC LONGITUDE	75 46 55.6928		60 FEET

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	$\theta$ (in $\Delta$ ) in angle
OE	0700	396,955.58	569,168.20	- 0 13 58
MO	1900	1,143,375.27	631,938.68	+ 0 45 52

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (in  $\Delta$ ) in FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
GRAYS HILL 2	166 57 26.8	167 11 25	0700
GRAYS HILL 2	166 57 26.8	166 11 35	1900



## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Form 525  
Rev. Aug. 1918

NAME OF STATION:	FORD	STATE:	Maryland	COUNTY:	Queen Annes
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CHIEF OF PARTY: R. W. Tomlinson.			Year: 1961 -			Described by R. L. Wright.		
NOTE.	HEIGHT OF TELESCOPE ABOVE STATION MARK	1	METERS, I	HEIGHT OF LIGHT ABOVE STATION MARK	1	METERS,		
16 -	Surface station mark.						DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
70 -	Underground station mark							

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
WALMSLEY				
11a Reference Mark 1	NNE	43.02	13.112	0 00 00.00
16a Azimuth Mark	E	Approx.	0.4 mile	211 59 08.9
11b Reference Mark 2	SE	41.00	12.497	271 21 10.50
Desc. Boundary Monument	SE	84.59	25.785	327 27 55.6
51 (traverse)	SE			343 56 52.3

The station is located in a pasturefield, 3.0 miles northwest of Hartly, Delaware, 5.0 miles west-southwest of Kenton, Delaware, 6.0 miles east of Sudlersville and on property owned by Mrs. Earnest Ford.

To reach the station from the crescentroads in Sudlersville, Maryland, go easterly on State Highway 300 for 6.0 miles to the Delaware-Maryland State Line and the station is located on the left about 200 feet north in the pasture field.

The station mark is a standard disk stamped FORD 1961, set in top of a square concrete monument which is 15 inches below the ground surface. It is 21.9 feet west of a standard metal witness post and marker, 23.5 feet west of a north and south fence line, 98.0 feet northwest of a large lene wild cherry tree and 179.0 feet north of a field entrance.

Reference mark 1 is a standard disk stamped FORD NO 1 1961, set in top of a square concrete monument which projects 1 inch above the ground surface. It is 1.0 foot west of the north and south fence line, 35.5 feet north of the witness post and 121.3 feet north of the field entrance.

Reference mark 2 is a standard disk stamped FORD NO 2 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.7 feet west of the north and south fence line, 37.8 feet south of the witness post and 50.0 feet north of the large lone wild cherry tree.

Boundary Monument No. 51 is a 12 X 12 inch limestone monument which projects 20 inches above the ground surface and has the letters P and M on the east and west sides of the monument. The monument is firmly set and in excellent condition except the corners are slightly chipped. It is located 1.5 feet west of a north and south fence line, 3.0 feet north of a large lone wild cherry tree and 97.0 feet north of a field entrance.

To reach the azimuth mark from the station, go east on State Highway 200 for 0.4 mile to the junction of State Highway 44 and the azimuth mark is located on the right as described.

The azimuth mark is a standard disk stamped FORD 1951, set in top of square concrete monument which is flush with the ground surface. It is 9.4 feet northeast of a standard mechanical witness post and marker, 11.5 feet east of a telephone pole number JB326, 32.4 feet south of the approximate center of State Highway 300 and 69.0 feet southwest of the crossroads intersection of State Highway 300 and State Highway 44.

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FORD

STATE.	MARYLAND	1961
1	2	3

**SOURCE** G-12731

	°	'	"	ELEVATION	18.4 METERS 60 FEET
GEODEIC LATITUDE	39	11	59.7215		
GEODEIC LONGITUDE	75	45	09.8348		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	N	E	$\theta$ from $\Delta$ to angle *
DE	0700	404,755.26	437,175.25	- 0 12 45
MD	1900	1,153,468.37	500,103.39	+ 0 46 58

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODESIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	COORD
FORD AZ MK	268 12 31.4	268 25 16	0700
FORD AZ MK	268 12 31.4	267 25 33	1900

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION FOSTER

STATE MARYLAND

YEAR 1961

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	51.2 METERS 168 FEET
39° 40' 41.4739	75° 47' 20.3885		

STATE & ZONE	COORD	N	Y	B (FOR Δ & 1) ANGLES
DE	0700	395,196.48	611,420.25	- 0 14 16
MD	1900	1,140,880.84	676,154.84	+ 0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B (FOR Δ &amp; 1) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK	355 01 22.4	355 15 38	0700
AZIMUTH MARK	355 01 22.4	354 15 46	1900

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U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: FOSTER STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 Described by R. L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.

1a. Surface station mark DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
DREN (CROW 1822) 1935	NE	28.46	0 00 00.00
BOUNDARY MONUMENT 84 - (traverse)	E	8.679	47 16 58.9
Reference Mark 1	E	102.65	110 51 00.1
16c Azimuth Mark	S	Apurposely 0.15 mile	168 09 18.7
11a. Reference Mark 2	NW	162.71	49.594 - 353 33 51.1

The station is located in the southwest section of a barn lot, 2.0 miles west-southwest of Newark, Delaware, 2 1/2 miles northeast of Elk Mills, Maryland, 3.0 miles south of the Pennsylvania State Line and on property owned by Mr. Clarence S. Foster.

To reach the station from the post office in Newark, Delaware, go west on Main Street for 0.4 mile to a triple fork, keep the left fork and go south-southwest on State Highway 2 and Elkton Road for 0.4 mile to a paved side road, right, turn right and go west on the paved road for 1.4 miles to a side road, right and the azimuth mark located on the left, south side of the road. Turn right and go north on the gravel road for 0.2 mile to a driveway right, leading to the residence of Mr. Clarence S. Foster, turn right and go west on the driveway for about 0.05 mile to a gate on the right, turn right through the gate and go south-southwest across the barn lot for 0.07 mile to the southwest corner of the barn lot and the station as described.

The station mark, a standard disk stamped FOSTER 1961, is set in top of a square concrete monument which is flush with the ground surface. It is 14.6 feet north of an east and west fence line, 42.0 feet east-northeast of a southwest fence corner and 107.0 feet west-northeast of a southeast fence corner.

Reference mark 1, a standard disk stamped FOSTER NO 1 1961, is set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.0 foot north of the east and west fence line, 4.6 feet west-northeast of the southeast fence corner, 142.0 feet east of the southwest fence corner and is about 4.0 feet lower than the station mark.

Reference mark 2, a standard disk stamped FOSTER NO 2 1961, is set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.6 feet east of a north and south fence line, 167.6 feet north of the southwest fence corner and is about 2 1/2 feet higher than the station mark.

Boundary Monument 84, is a 15-inch granite stone which projects about 2 1/2 feet above the ground surface. The position and traverse connection was taken to the apex of the monument. It is 42.5 feet north of the east and west fence line and 59.0 feet north-east of the southwest fence corner.

Azimuth mark, a standard disk stamped FOSTER 1961, is set in top of a square concrete monument which projects 3 inches above the ground surface. It is 1.7 feet east of a power-line pole number 1566, 35.0 feet south of the approximate center of the gravel road, 58.0 feet southeast of a T-graveled road intersection and 60.3 feet south-southeast of the southwest corner of a fence.

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: FRED  
STATE: Maryland  
COUNTY: Cecil  
CHIEF OF PARTY: R.W. Tomlinson  
YEAR: 1961  
DESCRIBED BY: V.D. Novak

NOTE: 1a. Surface station mark, 7c. Under-ground station mark	OBJECT	DISTANCE		BEARING	HEIGHT OF LIGHT ABOVE STATION MARK		METERS
		feet	meters		feet	meters	
11c. R.M. 2	JONES	92.43	28.174	W	00	00.0	1
11c. R.M. 1	R.M. 2	101.38	30.91	NNW	101	30.9	1
	Azimuth mark	167.43	50.85	SE	167	43.16	1
		86.52	26.372		332	49.31	1

The station is located about 5.0 miles northwest of Middletown Delaware, 2 1/2 miles east-southeast of Chesapeake City Maryland and on property owned by Mr. William Muller who gave permission.

To reach the station from the main intersection in South Chesapeake City, go east on paved road along south side of the canal for 0.5 mile to a T-road, turn right and go easterly on paved road for 1.4 miles to a crossroad, turn right and go southerly for 0.8 miles to the azimuth mark on the right, continue southerly on paved road for 0.45 mile to the station on the right.

The station, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 12 inches below the surface of the ground, stamped "FRED 1961". It is 60.5 feet west-northwest of powerline pole number 118, 45.0 feet northwest of a fence corner, 42.0 feet west of an asphalt road and 18.0 feet northeast of a standard metal witness post and marker.

Reference mark 1, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 4 inches above the surface of the ground, stamped "FRED NO 1 1961". It is 76.0 feet southeast of a standard metal witness post and marker, 68.0 feet southwest of powerline pole number 110, 46.0 feet south of a fence corner, 19.0 feet west of a asphalt road and 1.0 feet east of a fence line.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 5 inches above the surface of the ground, stamped "FRED NO 2 1961". It is 91.0 feet northeast of a standard metal witness post and marker, 41.0 feet west of a fence corner, 11.0 feet south of the approximate center of a field road and 1.0 feet north of a fence line.

Azimuth mark, is a standard disk set in the top of a 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "FRED 1961". It is 25.9 feet west of the approximate center of a asphalt road, 6.2 feet east-southeast of a guy line, 2.8 feet south of powerline pole and 1.6 feet west of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FRED  
STATE: MARYLAND  
YEAR: 1961  
SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	
		FEET	METERS
39 30	12.1053	547,728.38	19.6
75 46	44.6166	610,515.51	64

STATE COORDINATES (NAD 83)			
STATE & ZONE	CODE	X	Y
DE	0700	397,736.77	- 0 13 50
MD	1900	1,144,529.39	+ 0 45 59

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	DE	MD	DE	MD	
AZIMUTH MARK	165 03	55.8	165 17	46	0700
AZIMUTH MARK	165 03	55.8	164 17	57	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: FRED  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: C.L. Novak  
YEAR: 1961  
STATE: Maryland  
COUNTY: Cecil  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/2 miles southeast of Chesapeake City  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE	
		FEET	METERS
AZIMUTH MARK (VG)	NNW	(0.45 mile)	0 00 00.00
BOUNDARY MONUMENT	NE	(1.321, 65)	402.840 35 42 44.9
RM 1	SE	86.54	26.377 165 07 12
RM 2	W	92.43	28.172 293 55 26

Unable to measure between RM's

The station and all marks were recovered and found in good condition as described in the previous descriptions.  
The old Maryland-Delaware Boundary Monument number 72 was reset at this date, see description thereof.

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

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## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: GLASGOW  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: C.L. Novak  
YEAR 1961  
STATE: Maryland  
COUNTY: Cecil  
BENCH MARK ALSO ☐  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles west of Glasgow, Delaware  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Azimuth Mark (RM 3)	E	(0.25 mile)	0.00	00.00
Elkton, Rad Sta WSER Center Mast	SW	(3 miles)	120	10 50.0
RM 2	W	40.47	12.335	165 47 24
Unidentified W T	NW	(1 mile)	197	00 12.5
RM 1	ENE	43.32	13.203	343 26 25
Boundary Monument No. 79	E	42.47	12.945	354 06 30.5
RM 1 to Boundary Monument No. 79		8.02	2.444	

The station and both reference marks were recovered and found in good condition. The azimuth mark was found to have been removed from the drill hole. A new reference mark 3 was placed in the hole where the former azimuth mark was. A difference of 0.03 foot or 0.010 meter in distance was noted to reference mark 2. The angle between the reference marks were within close agreement with the 1961 observations. A complete new description of the station follows.

The station is located on the north side of U.S. Highway 40 about 2 miles west of Glasgow, Delaware and 2 1/2 miles east of Elkton, Maryland. It is on Highway Right-of-Way.

To reach the station from the intersection of U.S. Highway 40 and State Highway 213 in Elkton, go east on U.S. Highway 40 for 2.4 miles to the station on the left at the Maryland-Delaware States Lines.

The station mark is a standard disk stamped GLASGOW 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 35.5 feet north of the center of the west bound lane of U.S. Highway 40, 10 feet northeast of a sign "MARYLAND WELCOMES YOU", and 2 feet south of a witness post. (NOTE 1a 7a)

Reference mark 1 is a standard disk stamped GLASGOW NO 1 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 43 feet east-northeast of the witness post, 35.5 feet north of the center of the west bound lane of U.S. Highway 40 and 44 feet northeast of the sign. (NOTE 11a)

Reference mark 2 is a standard disk stamped GLASGOW NO 2 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 40 feet west of the witness post and 35.5 feet north of the center line of the west bound lane of U.S. Highway 40. (NOTE 11a)

The azimuth mark is a standard disk stamped GLASGOW 1961 NO 3 1975 AZI, cemented in a drill hole in the south side of a square concrete catch basin between the two lanes of U.S. Highway 40. The disk is flush with the surface. It is 36.5 feet southwest of the center of the catch basin lane of U.S. Highway 40, 3 feet south of the center of the catch basin and 2.1 feet west of a witness post. (NOTE described)

To reach the azimuth mark from the station, go east on U.S. Highway 40 for 0.25 mile to the mark on the left in the medium strip.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GLASGOW  
STATE: MARYLAND  
YEAR: 1961  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	29.8 METERS
39 36 22.8805	75 47 08.2521		98 FEET
STATE COORDINATES (FPM)			
STATE & ZONE	CODE	X	Y
DE	0700	396,037.92	585,251.24
MD	1900	1,142,177.80	648,003.61
			- 0 14 07
			+ 0 45 44

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\theta$  FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT		OF GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
AZIMUTH MARK		272 17 15.5	272 31 22	0700
		272 17 15.5	271 31 32	1900

Additional descriptive information for this station may be obtained from the National Geodetic Survey.



JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Rev. Aug. 1964

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GOLTS / STATE: Delaware / COUNTY: New Castle

CHIEF OF PARTY: R.N. Tomlinson		YEAR: 1961	Described by: V.D. Novak	
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 31 METERS		HEIGHT OF LIGHT ABOVE STATION MARK 34 METERS		
1a	Surface-station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
7a	Under-ground-station mark			
	OBJECT	BEARING	DISTANCE	DIRECTION
			feet	
			meters	
	WHARTON 1974			
11a	R.N. 2	NSW	72.90 -	00 00 00.0
10a	Azimuth mark	ENE	22.221 -	76 40 41.2
11e	R.N. 1	E	(Approx. 0.15 mile)	254 59 57.7
			81.03 -	283 41 05.4
			24.697	

The station is located about 5.0 miles southwest of Townsend Delaware, 1.0 mile northeast of the small village of Golts and on property owned by Mr. Edwin Brown who gave permission.

To reach the station from the General Store in the small village of Golts, go north for 0.1 mile to the main road, turn right and go northerly on asphalt road for 0.75 mile to a slide road right, turn right on gravelled road and go 0.45 mile to the state line, continue on gravelled road for 0.2 mile to a private road right, turn right and go 0.15 mile to a railroad crossing, (cross over railroad track and go 0.1 mile to the edge of the timber and the azimuth mark.), turn right and follow along the edge of the field for 0.2 mile to the station.

The station, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 2 inches above the surface of the ground, stamped "GOLTS 1961". It is 59.0 feet east of a 24-inch maple tree, 47.5 feet south-southeast of the south rail of a railroad track and 5.7 feet northeast of a standard metal witness post and marker.

Reference mark 1, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 2 inches above the surface of the ground, stamped "GOLTS NO 1 1961". It is 116.5 feet southeast of the south rail of the railroad track and 82.5 feet west-northwest of a standard metal witness post and marker.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 2 inches above the surface of the ground, stamped "GOLTS NO 2 1961". It is 69.8 feet east of a standard metal witness post and marker, 17.5 feet northwest of a 24-inch maple tree and 15.8 feet south of the south rail of a railroad track.

Azimuth mark, is a standard disk set in the top of a 10 x 10 inch concrete monument which is flush with the surface of the ground, stamped "GOLTS 1961". It is 18.0 feet east of the east end of open field, 10.5 feet southeast of a 30-inch oak tree, 11.0 feet west-northwest of a 30-inch oak tree and 8.0 feet east-northeast of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GOLTS / STATE: Delaware / YEAR: 1961 / SECOND ORDER

SOURCE: G-12731

DEODETIC LATITUDE	39 20 41.0022	ELEVATION	22.1 meters
DEODETIC LONGITUDE	75 45 49.7174		73 FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	$\theta$ OR $\Delta$ $\theta$ ANGLE
DE	0700	401,817.75	489,928.08	- 0 13 12
MD	1900	1,149,614.82	552,795.54	+ 0 46 33

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$   $\theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	DEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
AZIMUTH MARK	252 57 34.8	253 10 47	0700
AZIMUTH MARK	252 57 34.8	252 11 02	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: GOLTS

ESTABLISHED BY: L.A.L.

RECOVERED BY: C.L. Novak

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile northeast of Golts.

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		DISTANCE		DIRECTION	
OBJECT	BEARING	FEET	METERS		
AZIMUTH MARK	ENE	81.04	24.702	0 00 00.00	
RM 1	E	72.90	22.220	76 41 17	
RM 2	WSW	(136.80)	41.698	181 40 30	
BOUNDARY MONUMENT 61	W			193 27 31.0	

The station and all marks were recovered and found in good condition as previously described. The previous descriptions are adequate. A shorter distance of 0.01 foot or 0.005 meter to RM 1 was noted. All other distances and directions checked 1961 observations. The Maryland-Delaware Boundary Monument number 61 was established at this date, see description thereof.

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

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U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: HARVEST / STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson / YEAR: 1962 / DECEASED BY: Marvin W. Larabee /  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.55 METERS, 1 HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS,  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS, AND PROMINENT OBJECTS  
7a Underground station mark WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
BURR RH 4			00 00' 00.0
11a Reference Mark 1	ENE	23.008	66 47 58.8
11a Reference Mark 2	ESE	76.30	23-256 113 21 07.0
Dec Boundary Monument 29 (traverse)	SE	(93.724)	130 48 55.2
16a Azimuth Mark	NNW	28.567	345 15 04.9
		Approx. 0.15 mile	

The station is located in an east and west fence line between two cultivated fields and near a fence corner, about 5.5 miles east of Denton, Maryland and about 1.0 mile south of the small settlement of Burrville, Maryland.

To reach the station from the crossroad, State Highway 317 and the old highway, in Burrville, Maryland, go southeast on the old highway for 0.15 mile to a side road on the right. Turn right and go south-southeast on a gravelled road for 0.65 mile to a fork. Take the right fork and go south on a gravelled road for 0.1 mile to the azimuth mark on the right hand side of the road; continue southeast on the gravelled road for 0.35 mile to a fork. Take the left hand fork and go east-northeast on a gravelled road for 0.15 mile to a farm lane entrance on the left, north, side of the gravelled road. Turn left and go north on a farm lane for 0.1 mile to the north end of a barn. Continue north across a cultivated field for 0.15 mile to a fence line and a lone cedar tree. Turn right and go northwest along fence line to the end of fence, a distance of 0.05 mile. Turn left and go north for 0.05 mile to a standard metal witness post and marker and the station.

The station mark, a standard disk stamped HARVEST 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 3.0 feet southwest of a standard metal witness post and marker and 2.5 feet southeast of a fence line.

Reference mark 1, a standard disk stamped HARVEST NO 1 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 73.5 feet east of a standard metal witness post and marker, 0.4 inches west of a fence line and about the same elevation as the station mark.

Reference mark 2, a standard disk stamped HARVEST NO 2 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 76.4 feet southeast of a standard metal witness post and marker, 0.6 inches west of a fence line and about the same elevation as the station.

The azimuth mark, a standard disk stamped HARVEST 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 15.0 feet northwest of the centerline of a gravelled road, 3.0 feet north-northeast of a standard metal witness post and marker and 1.5 feet west of powerline pole No. 194-35-7.

Boundary Monument No. 29, a 12-inch square granite stone projecting about 25 inches above the surface of the ground, leans slightly to the south, in general the monument is in good condition. The monument has the letter M cut in on its west side and the letter P on the east side and a small cross was inscribed in its top and center for traverse purpose on this date. It is 94.5 feet southeast of a standard metal witness post and marker, 6.0 feet north of a 9-inch elm tree and in a north and south fence line.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HARVEST  
STATE: MARYLAND  
YEAR: 1962  
SOURCE: G-12731  
SECOND ORDER

DEODETIC LATITUDE	DEODETIC LONGITUDE	ELEVATION	20.3 METERS
38 52	50.2590		67
75 43	38.7551		

STATE & ZONE	CODE	X	Y	B (from A) & ANGLE
DE	0700	411,528.26	320,856.64	- 0 11 42
MD	1900	1,162,258.76	383,925.59	+ 0 47 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
AZIMUTH MARK	162 02 33.4	162 14 16	0700
AZIMUTH MARK	162 02 33.4	161 14 38	1900

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

NAME OF STATION: HERRINGS · STATE: Maryland COUNTY: Kent

CHIEF OF PARTY: R.W. Tomlinson · YEAR: 1961 · Described by: V.D. Novak ·  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS · HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.  
1a Surface station mark DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

1b	OBJECT	BEARING		DISTANCE		REMARKS
		1	2	1	2	
7a	HERRINGS Azimuth Mark					00 00 00.0
	Desc. Boundary Monument 62 (Traverse)			82.84	25.250	124 15 51.1
	11a R.M. 1	S		60.13	18.327	128 01 30.9
	11b R.M. 2	NW		69.65	21.229	342 14 37.9

The station is located about 4 1/2 miles southwest of Townsend, Delaware, 2.0 miles southeast of Seaford Maryland and 1.5 miles north-northeast of Goleta Maryland.

To reach the station from the railroad station in Townsend Delaware, go southwest-erly on paved road for 4.75 miles to a crossroad, continue southwesterly on paved road for 0.4 mile to a field road left, turn left and go easterly on field road for 0.08 mile to the azimuth mark. From the azimuth mark peak south-southeast for 0.18 mile to the station.

Station, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 1-inch above the surface of the ground, stamped "HERRINGS 1961". It is 16.8 feet west of a 8-inch oak tree, 8.9 feet south of a 16-inch oak tree with a triangular blaze and 4.6 feet northeast of a 8-inch oak tree.

Reference mark 1, is a standard disk set in the top of a concrete monument which is flush with the surface of the ground, stamped "HERRINGS NO 1 1961". It is 74.0 feet east-southeast of a 16-inch triangular blazed white oak tree, 73.5 feet east of a 8-inch white oak tree and 53.6 feet east of a white oak tree with a standard metal witness marker attached to it.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 1-inch above the surface of the ground, stamped "HERRINGS NO 2 1961". It is 75.8 feet west of a 8-inch white oak tree with a standard metal witness marker attached to it, 59.0 feet northwest of a 8-inch triangular blazed white oak tree and 53.6 feet west of a 16-inch triangular blazed white oak tree.

Azimuth mark, is a standard disk set in the top of a concrete cylinder which is about 14 inches below the surface of the ground, stamped "HERRINGS 1961". It is 1.0 foot south of a standard metal witness post and marker.

Boundary monument # 62, is a 12 x 12 inch square granite stone which projects about 24 inches above the ground and is leaning to the south at a 69° angle. The approximate center of the monument was observed and taped to. It is 86.0 feet east-southeast of a 16-inch triangular blazed white oak tree, 85.5 feet east of a 8-inch triangular blazed white oak tree and 65.6 feet east of a 8-inch white oak tree with a standard metal witness marker attached to it.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HERRINGS

STATE: MARYLAND YEAR: 1961 SECOND OR NOT SECOND: 1

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

DECODED LATITUDE	DECODED LONGITUDE	ELEVATION: SCALED		20 METERS
		39 21 33.1781	75 45 56.6974	

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from north)	CODE
DE	0700	401,289.77	495,209.21	- 0 13 17	
MD	1900	1,168,995.13	558,066.57	+ 0 46 29	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta_{CR} \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
HERRINGS AZ MK	128 16 10.9	128 29 28	0700
HERRINGS AZ MK	128 16 10.9	127 29 42	1900

POSITION DETERMINED BY TRAVERSE FROM STATION HERRINGS AZ MK

## HORIZONTAL CONTROL DATA

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U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
Chart No. 1  
1-7000 825  
1-7000 825

NAME OF STATION: HICKMAN

STATE: Delaware

COUNTY: Kent

CHIEF OF PARTY: R.M. Tomlinson / YEAR: 1962 / Described by: R.L. Wright

HEIGHT OF TELESCOPE ABOVE STATION MARK: 27.62 METERS / HEIGHT OF LIGHT ABOVE STATION MARK: 50.37 METERS

7a / Surface station mark: WHICH CAN BE SEEN FROM THE COAST AT THE STATION

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK, AND PROMINENT OBJECTS

Underground station mark

OBJECT

BEARING

DISTANCE

DIRECTION

PARKER

ESE 74.57 22.729 0 00 00.00

11a Reference Mark 1 119 20 20.5

11a Reference Mark 2 221 07 34.0

16a Azimuth Mark 229 12 22.7

Hickman, Rutles-Supnrb Tomto Plant 508 25 45.6

Desc. Boundary Monument 26 (Traverse) NW 325 38 55.9

Desc. B.M. 56 (UTS) NW 325 45 11.6

The station is located in the center Hickman, Delaware-Maryland, 7.0 miles south-

east of Denton, Maryland, 4.0 miles northwest of Greenwood, and on property owned by Mr.

Drummond.

To reach the station from the post office in Denton, go southerly on State Highway

404 for 5.7 miles to the junction of State Highway 16, turn left, go easterly on Highway

16 for 2.4 miles to a cross roads, at the south edge of the small village of Hickman,

turn left and go north on the macadam road for 0.25 mile to the cross roads and the

station located on the right as described.

The station mark is a standard disk stamped HICKMAN 1961, set in top of a square

concrete monument which is 12 inches below the ground surface. It is 32.0 feet south of

a gravelled driveway, 54.7 feet north of a standard metal witness post and marker and

66.0 feet east of the approximate center of the macadam road.

Reference mark 1 is a standard disk stamped HICKMAN NO 1 1961, set in top of a square

concrete monument which projects 2 inches above the ground surface. It is 1.0 foot north

of an east and west fence line, 27.0 feet south of the approximate center of the gravel-

led driveway and 60.1 feet east of the witness post.

Reference mark 2 is a standard disk stamped HICKMAN NO 2 1961, set in top of a square

concrete monument which projects 1 inch above the ground surface. It is 1.0 foot west of

a north and south fence line, 1.6 foot north of a powerline pole, 15.0 feet east of the

approximate center of the macadam road and 51.1 foot southwest of the witness post.

Boundary Monument No. 26 is a 12 X 12 inch limestone monument marked with the letters

M and P and projects about 24 inches above the ground surface. The monument has a U.S.

Geological Survey disk cemented in a drill in the north top edge of the monument. The

monument has been broken off and the parts placed back together and reinforced with

concrete. It is located 19.0 feet west of the approximate center of the macadam road,

28.6 feet southeast of a powerline pole # 76-6A and 71.0 foot southeast of the southeast

corner of the general store.

To reach the azimuth mark from the station and crossroads in Hickman, go west on a

gravelled road for 0.2 mile to the azimuth mark on the left as described.

The azimuth mark is a standard disk stamped HICKMAN 1961, set in top of a square

concrete monument which projects 2 inches above the ground surface. It is 2.7 feet north

of a powerline and telephone line pole, 43.7 feet south of a standard metal witness post

and marker, 41.0 feet south of the approximate center of the gravelled road and 91.0

feet southwest of a 20-inch lone pine tree.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION HICKMAN

STATE DELAWARE

YEAR 1962

SECOND ORIGIN

SOURCE G-12731

GEODETIC LATITUDE	38 50 12.1728	ELEVATION	16.3 meters
GEODETIC LONGITUDE	75 43 24.2868		53 feet

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (from north)
DE	0700	412,618.86	304,859.43	- 0 11 33
MD	1900	1,163,626.55	367,950.56	+ 0 48 04

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  (MDA)  $\theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
AZIMUTH MARK	113 24 17.4	113 35 50	0700
AZIMUTH MARK	113 24 17.4	112 36 13	1900



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

COUNTY: Sussex

STATE: Delaware

NAME OF STATION: JOHNSON

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 DESCRIBED BY: R. L. Wright

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	27 METERS	HEIGHT OF LIGHT ABOVE STATION MARK	30 METERS
1a	Surface station mark	139.12	189.03	15.1
7a	Underground station mark	90.52	284.59	28.5

OBJECT	BEARING	DISTANCE	DIRECTION
KINDIO	N	Approx. 0.4 mile	0 00 00.00
16a Azimuth Mark	S	42.405	11 35 00.8
11a Reference Mark 1	WNW	27.592	189 03 15.1
11a Reference Mark 2			284 59 28.5

The station is located in a cultivated field, 3.8 miles northeast of Federalsburg, 6.0 miles west-southwest of Bridgeville and on property owned by Mr. Claud Johnson. To reach the station from the intersection of Main Street and Central Avenue in Federalsburg, Maryland, go east on State Highway 313 "East Central Avenue" for 0.35 mile to the junction of State Highway 306 and 318, keep right on State Highway 318 for 2.85 miles to a side road left, just after passing a church on the left, turn left, go north on a gravelled road for 0.5 mile to a side road right, turn right, go northeast on a dirt road for 0.95 mile to a farm lane left, just after crossing a small wooden bridge, turn left, go 0.05 mile to a fork, turn right and go about 125.0 feet to the station on the right as described.

The station mark is a standard disk stamped JOHNSON 1962, set in top of a square concrete monument which is about 18 inches below the ground surface. It is 31.6 feet east of the approximate center of a driveway and 42.7 feet southeast of the southeast corner of a chicken house.

Reference mark 1 is a standard disk stamped JOHNSON NO 1 1962, set in top of a square concrete monument which projects 3 inches above the ground surface. It is 2.5 feet north of an evergreen hedge row, 10.6 feet north of the approximate center of a driveway and 33.6 feet east of a powerline pole.

Reference mark 2 is a standard disk stamped JOHNSON NO 2 1962, set in top of a square concrete monument which projects 3 inches above the ground surface. It is 1.7 feet east of a light pole, 1.7 feet south of the south side of the chicken house and 15.0 feet north of the driveway.

Boundary Monument No. 18 is a 12 X 12 inch limestone monument marked with the letters M and B. The monument was recovered in a prone position, top chipped and one corner with a bad crack. The foundation was searched for but not found. The monument was not traversed or observed. It is now located in a cultivated field about 200.0 feet north of the northeast corner of a chicken house.

To reach the azimuth mark from the main road and the driveway, go north-northeast on the gravelled road for 0.45 mile to a crossroad, turn left and go west on a farm road for 0.5 mile to an old barn and a light pole on the right and the azimuth mark as described. The azimuth mark is a standard disk stamped JOHNSON 1962, set in top of a square monument which projects 3 inches above the ground surface. It is 1.5 feet south-southwest of a light pole, 0.9 feet south-southwest of a standard metal witness post and marker, 32.0 feet north-northeast of the approximate center of a dim farm lane and 51.2 feet southeast of the northeast corner of a barn.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: JOHNSON  
STATE: DELAWARE  
YEAR: 1962  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	38 43 12.2839	ELEVATION	12.7 meters
GEODETIC LONGITUDE	75 42 51.4316		42 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	415,080.31	262,371.91
MD	1900	1,166,824.05	325,514.31

CODE	DE	MD	PLANE AZIMUTH (from earth)	PLANE AZIMUTH (from earth)	CODE
0700	187 06 01.8	187 17 12	0700		
1900	187 06 01.8	186 17 37	1900		

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TOSTATION OR OBJECT	DE	MD	PLANE AZIMUTH (from earth)	PLANE AZIMUTH (from earth)	CODE
AZIMUTH MARK	187 06 01.8	187 17 12	0700		
AZIMUTH MARK	187 06 01.8	186 17 37	1900		

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: JOHNSON

ESTABLISHED BY: R. W. T.

RECOVERED BY: C. L. Novak

YEAR: 1962

STATE: Delaware

COUNTY: Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles northwest of Atlanta

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET

HEIGHT OF LIGHT ABOVE STATION MARK: FEET

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
OBJECT	BEARING	DISTANCE	DIRECTION
AZIMUTH MARK	N	(1/2 mile)	0 00 00.00
RM 1	S	139.11	42.401 177 27 44
BOUNDARY MONUMENT 18	WSW	50.76	15.472 245 21 44.4
RM 2	WNW	90.54	27.596 273 24 19

The station and all marks were recovered and found in good condition as previously described. The previous descriptions are adequate. The Maryland-Delaware Boundary Monument number 18 was reset at this date, see description thereof.

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Rev. Aug. 1948

NAME OF STATION: JONES STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 Described by: R. L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS

1a. Surface-station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
16b. Azimuth Mark (V.O.)	N	Approx. 0.5 mile	0 00 00.00
11a. Reference Mark 1	E	64.875	05 15 01.0
11a. Reference Mark 2	N	29.015	19.774
11a. Boundary Monument	ESE	650.19	96 14 23
			274 24 38
			105 25 26.0

The station is located in the south edge of a cultivated field, 3.0 miles southeast of Chesapeake City on property owned by Mr. L. P. Argos, who lives about 0.6 mile east-northeast of the station.

To reach the station from the south end of the bridge over the canal at Chesapeake City, go south on U.S. Highway 215 for 3.0 miles to the junction of State Highway 310, turn left and go easterly on State Highway 310 for 4.0 miles to a cross road and the azimuth mark located in the southwest corner of the crossroad, turn right and go south on the macadam road for 0.5 mile to a northeast fence corner and the station as described.

The station mark is a standard disk stamped JONES 1961, set in top of a square concrete monument which is 12 inches below the ground surface. It is 2.2 feet north of a standard metal witness post, 2.8 feet north of an east and west fence line, 64.8 feet west of a northeast fence corner and 92.6 feet west of the approximate center of the macadam road.

Reference mark 1 is a standard disk stamped JONES NO 1 1961, set in top of a square concrete monument which is flush with the ground surface. It is 1.5 feet north of the northeast fence corner, 64.5 feet east of the witness post and 28.0 feet west of the approximate center of the macadam road.

Reference mark 2 is a standard disk stamped JONES NO 2 1961, set in top of a square concrete monument which is 12 inches below the ground surface. It is 2.8 feet north of the east and west fence line, 29.2 feet west of the witness post and 122.0 feet west of the approximate center of the macadam road.

Azimuth mark is a standard disk stamped JONES 1961, set in top of a 12-inch concrete cylinder which is flush with the ground surface. It is 1.2 feet west of a powerline pole number 1968; 26.0 feet south of the approximate center of the east and west macadam road, 29.0 feet west of the approximate center of the north and south macadam road, 34.0 feet southeast of the approximate center of the crossroad intersection.

Boundary Monument No. 71, a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. The monument leans about 4 degrees to the west. It has the letter P cut in on the east side and the letter N on the west side. The monument is in good condition. It is located in the middle of a cultivated field, 561.0 feet east of the center of a north and south blacktop road and 650.0 feet east-southeast of a standard metal witness post and marker.

NAME OF STATION: JONES

STATE: MARYLAND

YEAR: 1961

SECOND ORDER #

SOURCE: G-12731

GEODETIC LATITUDE	39 29 24.8920	ELEVATION	21.9 meters
GEODETIC LONGITUDE	75 46 41.7903		72 feet

STATE COORDINATES (feet)			
STATE & ZONE	CODE	X	Y
DE	0700	397,939.13	542,950.45
MD	1900	1,144,814.85	605,741.83
			- 0 13 48
			+ 0 46 01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CROSS
	182 35 41.7	182 35 41.7	182 49 30	181 49 41	
AZIMUTH MARK					0700
AZIMUTH MARK					1900

HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION

U.S. DEPARTMENT OF COMMERCE  
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
 NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

NAME OF STATION: KENT      STATE: Delaware      COUNTY: Kent

CHIEF OF PARTY: R.M. Tomlinson      YEAR: 1961      Described by: V.D. Novalk  
 NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS      HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS  
 1b Surface station mark      DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
KENT Azimuth mark (The azimuth mark was Observed and Geodimeter to.)	E	30.273	00 00 00.0
Decd. Boundary Monument 55 (traverse)	SW	(99.32)	144 40 59.2
Decd. BM H13 (R.M. 2)	W	65.76	183 19 55.8
11b R.M. 1	N	47.12	279 37 46.4

The station is located about 5 1/2 miles northwest of Kenton, Delaware, 4 1/2 miles east of Millington, Maryland and at the Maryland and Delaware State Line. On property owned by the State.

To reach the station from the crossroad in Millington, go easterly on State Highway 291 for 4.6 miles to the Delaware-Maryland State Line and the station on the right, continue easterly on highway for 0.65 miles to the azimuth mark on the left. Station, is a standard disk set in the top of a concrete cylinder which is flush with the surface of the ground, stamped "KENT 1961". It is 62.7 feet east of the north side of Delaware-Maryland State Line sign and 32.3 feet south of the approximate center of State Highway 291 and 3.0 feet north of a standard metal witness post and marker.

Reference mark 1, is a standard disk set in the top of a concrete cylinder which is flush with the surface of the ground, stamped "KENT NO 1 1961". It is 49.7 feet north of a standard metal witness post and marker, 76.5 feet northeast of the north side of the Delaware-Maryland State Line sign and 24.7 feet north of the approximate center of State Highway 291.

BM H13, is a standard bench mark disk set in the top of a 6 x 6 inch concrete monument which projects about 3 inches above the surface of the ground, stamped "H 13 1942". It is 64.1 feet west of a standard metal witness post and marker, 9.6 feet south of the north side of the Delaware-Maryland State Line sign and 26.4 feet south of the approximate center of State Highway 291.

Azimuth mark, is a standard disk set in the top of a concrete cylinder which projects about 2 inches above the surface of the ground, stamped "KENT 1961". It is 48.0 feet northeast of the T-road junction, 28.2 feet north of State Highway 6, 3.5 feet east-southeast of telephone pole number 244 and 3.4 feet north of a standard metal witness post and marker.

Boundary Monument NO. 55, a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. It has the letter P cut in the east side and the letter H on the west side. The monument is sitting plumb and in good condition. A small cross was inscribed in its top and center for traverse purpose. It is 96.0 feet south of the centerline of State Highway 6, 98.0 feet southwest of a standard metal witness post and marker, 67.0 feet south of Delaware and Maryland State Line metal sign and is in a cultivated field.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KENT      STATE: DELAWARE      YEAR: 1961      SECOND ORDER

SOURCE: G-12731  
 NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	39 15 28.4155	ELEVATION SCALED	20 METERS
GEODETIC LONGITUDE	75 45 25.4931		FEET

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (from north)	CODE
DE	0700	403,601.88	458,294.48	- 0 12 56	
MD	1900	1,151,948.35	521,198.61	+ 0 46 48	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
KENT AZ MK	252 15 34.6	252 28 30	0700
KENT AZ MK	252 15 34.6	251 28 46	1900

POSITION DETERMINED BY TRAVERSE FROM STATION KENT AZ MK

Detailed description



## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: KINDIG STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 Declared by: Harvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.63 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION  
7a Under ground station mark

OBJECT	BEARING	DISTANCE	DIRECTION
CHARLES			
11a Reference Mark 3	NE	195.06	00 00 00.0
11a Reference Mark 1	ENE	81.69	32 52 07.2
Desc. Boundary Monument	E	24.900	63 53 16.7
11a Reference Mark 2	E	(42.634)	12.995 83 39 12.6
	NW	79.885	24.369 297 36 27.9

The station is located in dense woods land, on property owned by Mr. Gilbert Kindig, about 6.0 miles west of Briggsville, Delaware and about 4.0 miles northeast of Federalsburg, Maryland.

To reach the station from the intersection of Main Street and Central Avenue in Federalsburg, Maryland; go east on State Highway 318, East Central Avenue, for 0.35 mile to the junction of State Highways 318 and 306 to a fork. Take the left hand fork and go north-northeast on State Highway 306 for 3.5 miles to a side road on the right, east, side of the highway. Just after passing a small tavern on the right hand side of the highway. Turn right and go east-northeast on a graveled road for 0.5 mile to a farm lane of the left hand side of the graveled road. Turn left and go west on the farm lane for 0.24 mile to a farm home and the east end of a chicken house for a short distance to the edge of a cultivated field; continue northeast on a field track road for 0.13 mile to the edge of a woods and the entrance of a woods road, continue northeast end east on the woods road for 0.2 mile to where the woods road makes a 90 degree turn to the left, a standard metal witness post, Boundary Monument No. 19 and the station on the right, hard side of the woods road.

The station mark, a standard disk stamped KINDIG 1962, is set in the top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 31.5 feet west-northwest of a 4-trunked oak tree, 22.6 feet south-southwest of the approximate centerline of the track woods road and 5.5 feet north-northwest of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped KINDIG NO 1 1962, is set in the top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 82.0 feet east-northeast of a standard metal witness post and marker, 51.0 feet east-northeast of a standard metal witness post and marker, 12.0 feet southeast of the approximate centerline of the track woods road and is about the same elevation as the station.

Reference mark 2, a standard disk stamped KINDIG NO 2 1962, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 84.0 feet northeast of the standard metal witness post and marker, 8.0 feet north of the approximate centerline of the woods road and is about 6 inches lower than the station.

Reference mark 3, a standard disk stamped KINDIG NO 3 1962, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 172.0 feet northeast of the approximate centerline of the woods road and 2.0 feet south-southwest of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KINDIG

STATE: MARYLAND

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38° 44' 07.3468	ELEVATION	13.2 METERS
GEODETIC LONGITUDE	75° 42' 56.9432		43 FEET

## STATE COORDINATES (FCH)

STATE & ZONE	CODE	X	Y	# OF Δ	ANGLE
DE	0700	414,661.67	267,943.83	- 0	11 14
MD	1900	1,166,308.92	331,077.86	+ 0	48 22

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B \sin \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
CHARLES	176 15 00.5	176 26 14	0700
CHARLES	176 15 00.5	175 26 39	1900

Boundary Monument No. 19 is a 12-inch square granite stone projecting about 30 inches above the surface of the ground, with the letter M cut in on the west side and the letter P on the east side. The monument was recovered in good condition, sturdy and plumb. It is 38.7 feet east-northeast of a standard metal witness post and marker, 13.0 feet south of the approximate center line of a track woods road and 9.6 feet southeast of a 4-trunked oak tree.



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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: KORNER

STATE: Delaware

COUNTY: Kent

CHIEF OF PARTY: R.W. Tomlinson

YEAR: 1962

Described by: E.G. Kaspari

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.70 METERS; DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
PIERSON AZIMUTH MARK			
Korner Azimuth Mark	E	7.524	0 00 0.0
Reference Mark 2	E	8.381	42 00 33
Boundary Monument	NW	(27.19)	272 02 49.4
Reference Mark 1	N	6.915	306 22 04

Station is located about 1.0 mile north of Burrowsville, located on the Maryland Delaware State line, about 5.5 miles east-northeast of Denton Maryland. On the property owned by Mr. Smith and farmed by Mr. James Larimore, permission was granted by Mr. Larimore.

To reach the station from the general store in Burrowsville, go north for 0.05 mile to a fork, keep the right fork and continue northerly for 0.25 mile to a side road right, turn right, go northeasterly on the macadam road for 0.7 mile to a side road right, continue north for 0.15 mile to a field road on the left, turn left, west on the field road for 0.2 mile to a fence corner at the end of a field, here turn right and go north for 0.1 mile to corner between two fields, turn left, go west across the field for 0.2 mile to the end of the field and a north-south fence line, turn left, go south for 0.1 mile to the southeast corner of the large area of woods and station.

Station mark, a standard disk stamped KORNER 1961, set in the top of a 10 X 10 inch square concrete monument, it is 4 inches below the ground surface. It is 47.5 feet north east of a 3/4 inch oak tree; 16.0 feet south-southeast of a 10 inch pine tree; 17.5 feet east of a north-south fence line; 12.0 feet north of a east-west fence line.

Reference mark No. 1, a standard disk stamped KORNER NO. 1 1961, set in the top of a 10 X 10 inch square concrete monument, it is 2 inches below the ground surface. It is 32.9 feet north-northeast of a 3/4 inch oak tree; 25.4 feet southeast of a 10 inch pine tree; 14.6 feet east of a north-south fence line.

Reference mark No. 2, a standard disk stamped KORNER NO. 2 1961, set in the top of a 10 X 10 inch square concrete monument, it is 2 inches below the ground surface. It is 12.0 feet north of a east-west fence line; 39.3 feet east of a 3/4 inch oak tree.

Azimuth mark, a standard disk stamped KORNER 1961, set in the top of a 10 X 10 inch square concrete monument, it is 2 inches below the ground surface. It is 2.5 feet south east of a powerline pole number K25-40-57-19-110; 1.9 feet north of a standard metal witness post; 18.5 feet west of center of road.

Boundary monument No. 31, a 12 inch square monument, with the letter D on the east side and the letter F on the west side, projecting about 30 inches from the ground surface. It is 30.5 feet north of a 3/4 inch oak tree; 23.5 feet south of a 10 inch pine tree.

Detailed description

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KORNER

STATE: DELAWARE

YEAR: 1962

SECOND ORDER

SOURCE: C-12731

GEODETIC LATITUDE	38 56 34.0799	ELEVATION	18.9 METERS
GEODETIC LONGITUDE	75 43 45.8622		62 FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	V	# COR Δ, # ADJUST
DE	0700	411,002.22	331,362.03	- 0 11 47	
MD	1900	1,161,550.63	394,419.71	+ 0 47 51	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # COR Δ, #1 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
KORNER AZ HK	258 59 30.2	259 11 17	0700
KORNER AZ HK	258 59 30.2	258 11 39	1900

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY • NATIONAL GEODETIC SURVEY

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION LAGANO STATE Delaware COUNTY New Castle

CHIEF OF PARTY R. W. Tomlinson YEAR 1961 Described by: H. W. Larabee

NAME OF STATION LAGANO  
STATE DELAWARE YEAR 1961  
SOURCE G-12731

NOTE: HEIGHT OF TITICONE ABOVE STATION MARK 28.20 METERS DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
CHICOSKY			0 00 00.0
11a Reference mark 2	SW 90.36	27.540	64 56 56.5
16a Azimuth mark	SW Approx. 0.5 mile		66 11 09.7
Boundary Monument	NW 324.87	99.022	152 14 59.0
11a Reference mark 1	E 92.95	28.524	259 18 31.2

The station is located about 2.5 miles southeast of Glasgow, Delaware, 3.0 miles southeast of Elkton, Maryland and on property owned by Mr. P. Lagano, who lives in the home across the road from the station.

To reach the station from the junction of U.S. Highways 40 and 213 about 1/2 mile south of the business district of Elkton, Maryland. Go south on U.S. Highway 213 for 1.3 miles to a crossroad. Turn left and go east on a blacktop road for 1.65 miles to a side road on the right. Turn right and go south on a blacktop road for 0.05 mile to powerline pole No. 12175, a metal witness post and marker and the azimuth mark on the right, south, side of the road. Continue east on the blacktop road for 0.5 mile to a wire gate on the left, north, side of the road at the southwest corner of a cultivated field. Pass through the gate, thence turn left and go east along the north side of an east and west fence line for 0.05 mile to the station.

The station mark, a standard disk stamped LAGANO 1961, is set in the top of a square concrete monument about 14 inches below the surface of the ground. It is 13.0 feet north of a standard metal witness post and marker, 15.3 feet north of an east and west fence line and 31.6 feet north of the centerline of a blacktop road.

Reference mark 1, a standard disk stamped LAGANO NO 1 1961, is set in the top of a square concrete monument projecting about 2 inches above the surface of the ground. It is 94.0 feet west of the standard metal witness post and marker, 17.2 feet north of the centerline of a blacktop road, 2.5 feet north of a fence line and 1.0 foot south of the south edge of cultivated field and is about 1.0 foot lower than the station.

Reference mark 2, a standard disk stamped LAGANO NO 2 1961, is set in the top of a square concrete monument projecting about 3 inches above the surface of the ground. It is 88.0 feet east of the standard metal witness post and marker, 18.5 feet north of the centerline of a blacktop road, 1.6 feet north of an east and west fence line, 1.0 foot south of the south edge of a cultivated field.

The azimuth mark, a standard disk stamped LAGANO 1961, is set in the top of a square concrete monument projecting about 2 inches above the surface of the ground. It is 16.0 feet west of the centerline of a blacktop road, 1.5 feet north-northeast of a standard metal witness post and marker and 1.3 feet east of powerline pole No. 12175.

Monument No 78 is the Mason-Dixon State Line Monument, located in the field north of the station. It projects about 20 inches and leans slightly to the south-southwest. A small cross was etched at the apex and center of the monument to hold the center point to measure to.

GEODETIC LATITUDE	39 35 25.9322	ELEVATION	16.3 METERS
GEODETIC LONGITUDE	75 47 01.2536		53 FEET

## STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	# (FOR Δ & ANGLE)
DE	0700	396,562.17	579,486.88	- 0 14 02
MD	1900	1,142,802.32	642,749.12	+ 0 45 48

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # (FOR Δ &) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
AZIMUTH MARK	64 23 25.5	64 37 28	0700
AZIMUTH MARK	64 23 25.5	63 37 37	1900

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NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

LAWRENCE ( Cecil County, Md., J.B., Jr., 1934 )--This is a second-order station located 8 miles SE of Chesapeake City, Maryland, 0.25 mile E of Warwick, on the property of Mr. Lawrence. Station is located in the top of a state boundary monument, 125 yards NE of the dirt road leading E from Warwick, 33 feet S of the fence corner and 1 foot E of the fence that parallels the state line. The monument is 1 foot square and projects 2.5 feet above the ground.

Underground and reference marks are standard bronze disks set in concrete, as described in notes 7a and 11a.

Reference mark No. 1 is located 113.08 feet S of the station, 1 foot E of the boundary fence. Mark projects 3 inches.

Reference mark No. 2 is located 201.00 feet E of the station, 1 foot N of the garden fence corner and 1 foot E of the fence, 50 paces N of the road. Mark projects 4 inches.

Azimuth mark is located 0.25 mile W of the station, 8 paces E of the center line of the paved road, 20 paces S of a power line pole, 8 paces S of the pasture fence; projects 4 inches.

A 64-foot tower will clear all lines; no cut-ins visible from the ground.

To reach the station from Warwick, Maryland, leave the paved road at the N edge of the village at R.D. Aiken's store and filling station. Turn right on dirt road and go 0.25 mile to a small white house on the N side of the road. Turn left just E of house and go 125 yards to the fence and the station, on the state boundary line. This is a second-order station.

OBJECT DISTANCE DIRECTION

WHARTON 0°00'00.0"

R.M. 2 201.00 feet 40°43'07.2"

Azimuth mark No. 3 V.G. 0.25 mile 138°09'52.45"

R.M. 1 113.08 feet 358°26'14.0"

Height of light above station mark - 27 meters.

Height of telescopes above station mark - 23 meters.

(R.L.S., 1943)--Recovered as described by J.B., Jr., in 1934 except that reference mark 2 is SW of the station, 1 foot S of garden fence corner, 1 foot W of fence, and 50 paces NE of the road.

### RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION LAWRENCE (BOUNDARY MONUMENT - 66)

ESTABLISHED BY J. B. Jr. YEAR: 1934 STATE DELAWARE - MARYLAND

RECOVERED BY R. M. Tomlinson YEAR: 1961 COUNTY Cecil - New Castle

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARK AND MONUMENT OBJECTS WHICH CAN BE SEEN FROM THE STATION		METERS		HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
OBJECT	BEARING	FEET	DISTANCE	FEET	DIRECTION	FEET	DIRECTION
WHARTON 1934	SW	201.02	61.274	0	00° 00' 00"	0	00° 00' 00"
Reference mark 2	W	Approx. 0.25 mile	94 38 46.5	94	41° 21' 5"	40	41° 21' 5"
Azimuth Mark	S	113.07	34.465	34.465	25° 51' 3"	94	38 46.5
Reference Mark 1						358	25 51.3

The station mark, reference marks 1 and 2 and the azimuth mark (reference mark 3) were recovered as described and found in good condition. The distance to reference marks 1 and 2 checked with the previous data. The direction to reference mark 2 checked with the previous data. A difference of 1 minute and 45.7 seconds was noted to reference mark 1 was noted on this date. The azimuth mark (reference mark 3) being obstructed by a building was no more useable. The mark was destroyed on this date and a new azimuth mark was established.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION LAWRENCE BURY MON 66 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1934  
SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	39° 25' 02.1562	ELEVATION	22.4 meters
GEODETIC LONGITUDE	75° 46' 12.5065		73 feet

### STATE COORDINATES (FEET)

STATE & ZONE	CODE	X	Y	B (100' Δ, 91' ANGLE)
DE	0700	400,130.78	516,357.99	- 0 13 28
MD	1900	1,147,468.65	579,191.66	+ 0 46 19

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \frac{1}{2} \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TU STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH	CODE
AZ MK 1961	91 03 39.4	91 17 07	0700
AZ MK 1961	91 03 39.4	90 17 21	1900
AZ MK RM 3 1934	134 34 44.9	134 48 13	0700
AZ MK RM 3 1934	134 34 44.9	133 48 26	1900

To reach the azimuth mark from the station: go south on the track timber road for 0.15 mile to the blacktop road. Turn right and go west on the blacktop road for 0.14 mile to a 36-inch maple tree, a standard metal witness post and marker and the mark on the left southwest side of the blacktop road.

The azimuth mark, a standard disk stamped LAWRENCE 1934, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 14.9 feet southwest of the centerline of a blacktop road, 10.6 feet southeast of a 36-inch maple tree and 1.6 feet northeast of a standard metal witness post and marker. Note 16 a.

The station is located about 8.0 miles southeast of Chesapeake City, Maryland and 0.25 mile east of Warwick, Maryland and on property owned by Mr. Lawrence. It is about 125 yards northeast of a blacktop road, 33.0 feet south of a fence corner and 1.0 foot east of a fence line that parallels the State Line. The station is in an upright position and in good condition. Triangulation disc of the U. S. Coast and Geodetic Survey is in the top and center of the stone. Marked with M and P. The stem of the P is broken perhaps in an attempt to convert P to D. It is a 12 X 12 inch stone projecting about 30 inches above the surface of the ground.



## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1923 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	LEDERHAM	YEAR	1962	SECOND ORDER
STATE	DELAWARE			
COURSE	G-12731			
STATION'S POSITION	38 69 20.7703 75 63 21.2172	ELEVATION	16.7 METERS 53 FEET	
STATE COORDINATES (1923)				
STATE & ZONE	POINT			
DE	0700			
MD	1900			
		412,804.19 1,163,962.07	299,658.33 362,756.63	0 11 30 0 0 48 06
STATION'S POSITION				
LEDERHAM AZ HK		88 09 38.8	88 21 09	0700
LEDERHAM AZ HK		88 09 38.8	87 21 32	1900
AZ HK RESET 1962		176 03 58.8	176 15 29	0700
AZ HK RESET 1962		176 03 58.8	175 15 52	1900

## NOTE

See BOUNDARY MONUMENT 25, 1977 for additional information on this station.

Station, reference mark No. 1, reference mark No. 2, and azimuth mark were recovered in good condition. Because of road improvement a new azimuth mark was set, and until the original azimuth mark is destroyed it can be read as previously described.

A new description to reach the station and for the reset azimuth mark follows: To reach the station from the post office in Denton go south on State Highway 16 for 5.7 miles to the junction of State Highways 16 and 16. Turn left and go east on State Highway 16 for 2.4 miles to a crossroad at the south edge of Hickman at the State line and the azimuth mark on southeast corner as described. Turn right and go south on a gravel road for 0.7 mile to more road curves to west, continue south on narrow gravel road for 0.05 mile to first dirt driveway on left. Boundary Monument No. 25, a standard metal witness post and marker, and the station are at the northeast corner of narrow gravel road and dirt driveway as described.

The azimuth mark, a standard disk stamped LEIDERHAM 1961 RESET 1962, is set in top of a 10-inch square concrete monument flush with the ground. It is 53.0 feet southeast of the centerline intersection of State Highway 16 and the road leading to Hickman, Maryland, at the Delaware State line 25.0 feet west of the centerline of gravel road, 18.0 feet northwest of guy-pole No. 1126, 71.6, 3.0 feet southeast of a metal underground telephone cable post, and 43.0 feet south of State Highway 16. The southeast corner of the brick chimney of the store at the northeast corner of the road intersection is in line with the azimuth mark.

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## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION	LEDERHAM	STATE	DELAWARE	COUNTRY	SURVEY
CHIEF OF PARTY	R. W. Tomlinson	Year:	1962	Observed by:	Harvey W. Larabee
1a - Height of instrument above station mark	1.24	METERS		Height of light above station mark	2
1b - Surface station mark				Distances and bearings to azimuth mark, reference marks and prominent objects which can be seen from the station	
7a - Underground station mark					
		azimuth	distance		DIRECTIONS
11a - Reference mark 1	SE	27.03	0.887	0	00.0
16a - Azimuth mark	(marked)	Approx. 0.25 mile		130	07 44.2
16a - Boundary Monument No. 25 (traverse)	W	(4.324)	1.318	270	50 00.36
11a - Reference mark No. 2	N	38.06	11.600	273	09 45.6
				359	17 40.7

The station is located along the east right-of-way of a narrow dirt road, about 7.0 miles southeast of Denton, Maryland and 1.0 mile south of the small settlement of Hickman.

To reach the station from the post office in Denton go south on State Highway 16 for 5.7 miles to the junction of State Highways 16 and 16. Turn left and go east on State Highway 16 for 2.4 miles to a crossroad at the south edge of Hickman at the State line. Turn right and go south on a gravel road for 0.75 mile to a driveway. Boundary Monument No. 25, a standard metal witness post and marker, and the station on the left, east side of the gravel road.

To reach the azimuth mark from the station: go west on a gravel road for 0.1 mile to a T-road intersection; continue west on a gravel road for 0.25 mile to a standard metal witness post and marker, powerline pole No. 6128336 and the azimuth mark on the right, north, side of the road.

The station mark, a standard disk stamped LEIDERHAM 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 22.5 feet east of the centerline of a gravel road, 9.5 feet north of the centerline of a driveway and 2.4 feet northeast of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped LEIDERHAM NO 1 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 27.2 feet north-northeast of a standard metal witness post and marker, 45.0 feet east of the centerline of a gravel road, 9.5 feet northeast of the centerline of a driveway and 3.0 feet northeast of a 12-inch apple tree.

Reference mark 2, a standard disk stamped LEIDERHAM NO 2 1961, is set in top of a 10-inch square concrete monument about 2 inches below the surface of the ground. It is 40.5 feet northeast of a standard metal witness post and marker and 19.0 feet east of the centerline of a gravel road.

The azimuth mark, a standard disk stamped LEIDERHAM 1961, is set in top of a 10-inch square concrete monument about 2 inches below the surface of the ground. It is 18.0 feet north of the centerline of a gravel road, 2.4 feet northeast of a standard metal witness post and marker and 2.2 feet east of powerline pole No. 61-24-3-34.

Boundary Monument No. 25, a 12-inch square granite block about 30 inches above the surface of the ground. It has the coat of arms on the east and west sides, set plumb and is in good condition. It is in a north and south fence line, about 18.5 feet east of the centerline of a gravel road, 9.5 feet north of the centerline of a gravel driveway and 4.6 feet west of a standard metal witness post and marker.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION	LEDERHAM	STATE	DELAWARE	COUNTRY	SURVEY
ESTABLISHED BY	R. W. T.	Year:	1962	Observed by:	Harvey W. Larabee
RECOVERED BY	J. Stoenberg	Year:	1962	Observed by:	Harvey W. Larabee
HEIGHT OF TELESCOPE ABOVE STATION MARK		METERS		HEIGHT OF LIGHT ABOVE STATION MARK	
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION					
OBJECT	LEDERHAM, 1961 Azimuth mark	BEARING	WEST	DISTANCE	DIRECTION
LEDERHAM, 1961 Azimuth mark	Reset 1962			0.7 mile	00 00 00.00 R7 54 20.0



HORIZONTAL CONTROL DATA

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Bldg. 204  
Bldg. 204

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: LEE STATE: MARYLAND COUNTY: Caroline

CHIEF OF PARTY: R. M. Tomlinson YEAR: 1961 Described by: V. D. Novak

NOTES	HEIGHT OF TELESCOPE ABOVE STATION MARK		HEIGHT OF LIGHT ABOVE STATION MARK		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		DISTANCE		BEARING		OBSTRUCTION	
	Surface station mark	Under ground station mark	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
1a												
7a												
	SHOOKLEY											
	BOUNDARY MONUMENT #1 (Traverse)		358.17	109.169	S	00	00	00.00				
11a	R.H. 2		35.19	10.724	SSW	01	40	59.0				
16a	LEE AZIMUTH MARK (Good. Measurement)			352.113	N	17	06	45.9				
11a	R.H. 1		30.35	9.249	ENE	101	57	02.28				

The station is located about 3.0 miles northwest of Goldboro Maryland, 2.0 miles southeast of Henderson Maryland and on property owned by Mr. Christopher Lee who lives in the house south of the station.

To reach the station from the main crossroads at the post office in Goldboro, go southeasterly on the macadam road for 0.6 mile to where the macadam road turns left, continue straight ahead on gravelled road for 1.2 miles to the azimuth mark on the left, continue on gravelled road for 0.22 mile to the State Line and the station on the right. Station, is a standard disk set in the top of 10 x 10 inch concrete monument which is about 14 inches below the surface of the ground, stamped "LEE 1961". It is 30.0 feet south of the approximate center of a gravelled road, 41.2 feet southeast of the Delaware-Maryland State Line sign and 4.2 feet west of a standard metal witness post and marker.

Reference mark 1, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 14 inches below the surface of the ground, stamped "LEE NO 1 1961". It is 45.0 feet southwest of powerline pole No. 57, 15.5 feet south of the approximate center of a gravelled road and 1.6 feet west of a standard metal witness post and marker.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 14 inches below the surface of the ground, stamped "LEE NO 2 1961". It is 65.5 feet south of the approximate center of a gravelled road, 65.0 feet southeast of the Delaware-Maryland State Line sign and 1.7 feet north of a standard metal witness post and marker.

Azimuth mark, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 8 inches below the surface of the ground, stamped "LEE 1961". It is 33.0 feet north-northwest of a 10-inch triangular bleazed maple tree, 18.1 feet north of the approximate center of a gravelled road and 2.7 feet west of a standard metal witness post and marker.

Boundary Monument # 41 is a 12 x 12 inch granite stone which projects about 30 inches above the surface of the ground, in general the monument is in good condition. The monument has the letter M cut in the west side of the monument and the letter P on the east side of it and a small cross was inscribed in its top and the approximate center for traverse purpose on this date. It is 480.0 feet south of the approximate center of a gravelled road and 35.0 feet east of a drainage ditch.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION LEE  
STATE MARYLAND  
YEAR 1961  
SOURCE C-12731  
SECOND ONCE

DEODETIC LATITUDE	39 03 20.2090	ELEVATION	14.4 METERS
DEODETIC LONGITUDE	75 44 27.8148		47

STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE	0700	407,875.51	384,602.45
MD	1900	1,157,500.80	447,595.06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 100 Δ #1 FORMULA SELECTING THE SECOND TERM

TO STATION ON OBJECT		GEODETIC AZIMUTH (From south)		PLANE AZIMUTH (From south)		CODE	
LEE AZ MK		98 58 12.5	99 10 28			0700	
LEE AZ MK		98 58 12.5	98 10 48			1900	

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1922 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
July 1977

NAME OF STATION: LEVELS / STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson / YEAR: 1961 Described by: V. D. Novak /

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 31 / METERS: 1.3 / SURFACE STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
CARTER			
11a Reference Mark 1	N -	89.85	27.387
Desc. Boundary Monument	N -	92.98	28.139
16a Azimuth Mark	SE -	Approx. 0.45 mile	145 28 13.8
11a Reference Mark 2	SSW -	70.74	21.563

The station is located about 3.0 miles west-southwest of Middletown, Delaware, 2.0 miles north of Jarvick, Maryland and on property owned by Mr. Charles Panciroli who lives about 0.3 mile north of the station.

To reach the station from the Junction of Broad Street and Main Street in Middletown, Delaware; go southerly on U. S. Highway 301 for 2.4 miles to a side road right. Turn right and go northerly on a macadam road for 0.6 mile to the azimuth mark on the left; continue on the asphalt road for 0.45 mile to the station on the right.

The station mark, a standard disk stamped LEVELS 1961, is set in top of a 10-inch square concrete monument which is about 16 inches below the surface of the ground. It is 13.5 feet east of a standard metal witness post and marker and 13.5 feet east of a north and south fence line.

Reference mark 1, a standard disk stamped LEVELS NO 1 1961, is set in top of a 10-inch square concrete monument which is about 3 inches below the surface of the ground. It is 89.9 feet south of a standard metal witness post and marker and 1.6 feet east of a north-south fence line.

Reference mark 2, a standard disk stamped LEVELS NO 2 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 67.2 feet north of a standard metal witness post and marker and 1.9 feet east of a north and south fence line.

The azimuth mark, a standard disk stamped LEVELS 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 20.0 feet southwest of the approximate centerline of a macadam road, 1.5 feet west of a standard metal witness post and marker and 1.0 feet west of a fence line. Boundary Monument No. 68, is a Mason-Dixon State Line Monument. It is located in the fence line north of the station, and projects about 30 inches above the surface of the ground. A small cross was etched at the approximate center of the monument to hold the center point to measure to.

NAME OF STATION: LEVELS

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 26 45.8700	ELEVATION	13.8 METERS
GEODETIC LONGITUDE	75 46 21.1066		45 FEET
STATE COORDINATES (Feet)			
STATE & ZONE	CODE	N	E
DE	0700	399,497.22	526,854.27
MD	1900	1,146,652.67	589,675.23

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta \theta = \frac{1}{R} \sin \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From North)	PLANE AZIMUTH (From North)	CODE
AZIMUTH MARK	321 46 06.9	321 59 41	0700
AZIMUTH MARK	321 46 06.9	320 59 53	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LOCKERMAN STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson, YEAR: 1961  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 31.72 METERS  
HEIGHT OF LIGHT ABOVE STATION MARK 34.51 METERS

18 - 741	Sighting station under foundation mark	OBJECT	BEARING	DISTANCE	DIRECTION	OBSERVATION
		LAWRENCE 1934				
		Reference Mark 1	E	78.428	23.005	98 39 53.1
		Boundary Monument		99.89	30.4469	150 53 23.6
		Azimuth Mark	SSW	Approx. 0.5 mile		204 44 15.0
		Reference Mark 2	NW	76.565	23.277	304 29 53.5

The station is located in the north edge of a cultivated field, 1.5 miles south-south-east of Warwick, 2.0 miles north of Sasasfras, 4.0 miles west-northwest of Townsend and on property owned by Mr. Oyo Lockerman.

To reach the station from the post office in Warwick, go east on State Highway 282 for 0.2 mile to a crossroad, turn right and go south on a macadam road for 1.65 miles to a macadam side road right, turn right and go southwesterly on a narrow macadam road for 2.0 miles to a side road right, turn right and go north for 0.6 mile to Mr. Lockerman's farm on the right, turn right and go east passing to the right of the barn and continue east on the field road for 0.2 mile to a creek and dam, continue east along the south end of the dam for about 100 feet to the west edge of a cultivated field, turn right and go south along the west edge of the field for about 60 paces to the azimuth mark on the right, turn left and go north along the west edge of the cultivated field for 0.25 mile to the northwest corner of the field and the station as described.

The station mark is a standard disk stamped LOCKERMAN 1961, set in top of a square concrete monument which is 18 inches below the ground surface. It is 12.0 feet south of the north edge of the cultivated field, 20.2 feet south-southwest of a standard metal witness post and marker, 20.0 feet south of an east and west fence line, 40.0 feet south of a T-intersection in the east and west, north and south fence line and 40.0 feet west of a 36-inch-5 trunk maple tree.

Reference mark 1 is a standard disk stamped LOCKERMAN NO 1 1961, set in top of a square concrete monument which is flush with the ground surface. It is 2.0 feet south of the east and west fence line, 42.0 feet east of the T-intersection in the fence line and 81.0 feet east of the witness post.

Reference mark 2 is a standard disk stamped LOCKERMAN NO 2 1961, set in top of a square concrete monument which is flush with the ground surface. It is 2.5 feet south of the east and west fence line, 5.0 feet west-south-west of a 6-inch dead tree stump, 7.0 feet north of the north edge of the cultivated field and 68.6 feet east of the witness post.

Boundary Monument No. 65 is a 11 X 11 inch limestone monument bearing the coat of arms on the east and west side and projects about 18 inches above the ground surface. It is 83.0 feet south-southwest of the east and west fence line, 96.0 feet south-southwest of the T-intersection if the fence line and 116.8 feet south-southwest of the witness post and marker.

Azimuth mark is a standard disk stamped LOCKERMAN 1961, set in top of a square concrete monument which projects 3 inches above the ground surface. It is 2.6 feet east-south-east of a standard metal witness post and marker, 6.0 feet west of the west edge of the cultivated field, 11.0 feet north of the northeast corner of a woven fence line and 12.0 feet northeast of a 24-inch poplar tree.

NAME OF STATION: LOCKERMAN

STATE: MARYLAND YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 24 10.6925	ELEVATION	16.5 METERS
GEODETIC LONGITUDE	75 46 09.0208		54 FEET

## STATE COORDINATES (FATH)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (from north)
DE	0700	400,386.01	511,149.92	- 0 13 26
MD	1900	1,147,812.40	573,988.85	+ 0 46 21

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
AZIMUTH MARK	21 43 48.0	21 57 14	0700
AZIMUTH MARK	21 43 48.0	20 57 27	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LONGFELLOW STATE: Maryland COUNTY: Caroline

NAME OF STATION: LONGFELLOW

CHIEF OF PARTY: R.V. TURLINSON YEAR: 1962 Described by: E.G. KASFAU

SECOND ORDER

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.70 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30.35 METERS.

1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o	1p	1q	1r	1s	1t	1u	1v	1w	1x	1y	1z	1aa	1ab	1ac	1ad	1ae	1af	1ag	1ah	1ai	1aj	1ak	1al	1am	1an	1ao	1ap	1aq	1ar	1as	1at	1au	1av	1aw	1ax	1ay	1az	1ba	1bb	1bc	1bd	1be	1bf	1bg	1bh	1bi	1bj	1bk	1bl	1bm	1bn	1bo	1bp	1bq	1br	1bs	1bt	1bu	1bv	1bw	1bx	1by	1bz	1ca	1cb	1cc	1cd	1ce	1cf	1cg	1ch	1ci	1cj	1ck	1cl	1cm	1cn	1co	1cp	1cq	1cr	1cs	1ct	1cu	1cv	1cw	1cx	1cy	1cz	1da	1db	1dc	1dd	1de	1df	1dg	1dh	1di	1dj	1dk	1dl	1dm	1dn	1do	1dp	1dq	1dr	1ds	1dt	1du	1dv	1dw	1dx	1dy	1dz	1ea	1eb	1ec	1ed	1ee	1ef	1eg	1eh	1ei	1ej	1ek	1el	1em	1en	1eo	1ep	1eq	1er	1es	1et	1eu	1ev	1ew	1ex	1ey	1ez	1fa	1fb	1fc	1fd	1fe	1ff	1fg	1fh	1fi	1fj	1fk	1fl	1fm	1fn	1fo	1fp	1fq	1fr	1fs	1ft	1fu	1fv	1fw	1fx	1fy	1fz	1ga	1gb	1gc	1gd	1ge	1gf	1gg	1gh	1gi	1gj	1gk	1gl	1gm	1gn	1go	1gp	1gq	1gr	1gs	1gt	1gu	1gv	1gw	1gx	1gy	1gz	1ha	1hb	1hc	1hd	1he	1hf	1hg	1hh	1hi	1hj	1hk	1hl	1hm	1hn	1ho	1hp	1hq	1hr	1hs	1ht	1hu	1hv	1hw	1hx	1hy	1hz	1ia	1ib	1ic	1id	1ie	1if	1ig	1ih	1ii	1ij	1ik	1il	1im	1in	1io	1ip	1iq	1ir	1is	1it	1iu	1iv	1iw	1ix	1iy	1iz	1ja	1jb	1jc	1jd	1je	1jf	1jg	1jh	1ji	1jj	1jk	1jl	1jm	1jn	1jo	1jp	1jq	1jr	1js	1jt	1ju	1jv	1jw	1jx	1jy	1jz	1ka	1kb	1kc	1kd	1ke	1kf	1kg	1kh	1ki	1kj	1kk	1kl	1km	1kn	1ko	1kp	1kq	1kr	1ks	1kt	1ku	1kv	1kw	1kx	1ky	1kz	1la	1lb	1lc	1ld	1le	1lf	1lg	1lh	1li	1lj	1lk	1ll	1lm	1ln	1lo	1lp	1lq	1lr	1ls	1lt	1lu	1lv	1lw	1lx	1ly	1lz	1ma	1mb	1mc	1md	1me	1mf	1mg	1mh	1mi	1mj	1mk	1ml	1mm	1mn	1mo	1mp	1mq	1mr	1ms	1mt	1mu	1mv	1mw	1mx	1my	1mz	1na	1nb	1nc	1nd	1ne	1nf	1ng	1nh	1ni	1nj	1nk	1nl	1nm	1nn	1no	1np	1nq	1nr	1ns	1nt	1nu	1nv	1nw	1nx	1ny	1nz	1oa	1ob	1oc	1od	1oe	1of	1og	1oh	1oi	1oj	1ok	1ol	1om	1on	1oo	1op	1oq	1or	1os	1ot	1ou	1ov	1ow	1ox	1oy	1oz	1pa	1pb	1pc	1pd	1pe	1pf	1pg	1ph	1pi	1pj	1pk	1pl	1pm	1pn	1po	1pp	1pq	1pr	1ps	1pt	1pu	1pv	1pw	1px	1py	1pz	1qa	1qb	1qc	1qd	1qe	1qf	1qg	1qh	1qi	1qj	1qk	1ql	1qm	1qn	1qo	1qp	1qq	1qr	1qs	1qt	1qu	1qv	1qw	1qx	1qy	1qz	1ra	1rb	1rc	1rd	1re	1rf	1rg	1rh	1ri	1rj	1rk	1rl	1rm	1rn	1ro	1rp	1rq	1rr	1rs	1rt	1ru	1rv	1rw	1rx	1ry	1rz	1sa	1sb	1sc	1sd	1se	1sf	1sg	1sh	1si	1sj	1sk	1sl	1sm	1sn	1so	1sp	1sq	1sr	1ss	1st	1su	1sv	1sw	1sx	1sy	1sz	1ta	1tb	1tc	1td	1te	1tf	1tg	1th	1ti	1tj	1tk	1tl	1tm	1tn	1to	1tp	1tq	1tr	1ts	1tt	1tu	1tv	1tw	1tx	1ty	1tz	1ua	1ub	1uc	1ud	1ue	1uf	1ug	1uh	1ui	1uj	1uk	1ul	1um	1un	1uo	1up	1uq	1ur	1us	1ut	1uu	1uv	1uw	1ux	1uy	1uz	1va	1vb	1vc	1vd	1ve	1vf	1vg	1vh	1vi	1vj	1vk	1vl	1vm	1vn	1vo	1vp	1vq	1vr	1vs	1vt	1vu	1vv	1vw	1vx	1vy	1vz	1wa	1wb	1wc	1wd	1we	1wf	1wg	1wh	1wi	1wj	1wk	1wl	1wm	1wn	1wo	1wp	1wq	1wr	1ws	1wt	1wu	1wv	1ww	1wx	1wy	1wz	1xa	1xb	1xc	1xd	1xe	1xf	1xg	1xh	1xi	1xj	1xk	1xl	1xm	1xn	1xo	1xp	1xq	1xr	1xs	1xt	1xu	1xv	1xw	1xx	1xy	1xz	1ya	1yb	1yc	1yd	1ye	1yf	1yg	1yh	1yi	1yj	1yk	1yl	1ym	1yn	1yo	1yp	1yq	1yr	1ys	1yt	1yu	1yv	1yw	1yx	1yy	1yz	1za	1zb	1zc	1zd	1ze	1zf	1zg	1zh	1zi	1zj	1zk	1zl	1zm	1zn	1zo	1zp	1zq	1zr	1zs	1zt	1zu	1zv	1zw	1zx	1zy	1zz
Surface station mark	Underground station mark	Object	Bearing	Distance	Direction																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Station is located about 1.0 mile north of Whiteleysburg, about 4.0 miles east of Greensboro Maryland, in dense woods land and on the property line between property owned by Mr. Earnest Longfellow and Mr. Hughes.

To reach the station from Greensboro Maryland, go east for 0.4 mile to 3 forks at the junctions of State Highways 313 and 314, keep the middle road Highway 314 and go southeasterly for 3.8 miles to a Y-fork in the west edge of Whiteleysburg, keep the left fork which becomes State Highway 12 and continue easterly for 0.95 mile to a side road left, turn left, go northerly for 0.85 mile on the macadam road to a side road left, turn left, go northerly on the macadam road for 0.5 mile to a gate and a farm road on the left, turn left go south for 0.2 mile to the residence of Mr. Kellor Edwards. Continue south along the west edge of field for 0.1 mile to woods, turn left along the north edge of woods for 0.05 mile to a woods road right, turn right, on woods road for 0.2 mile and station on the right.

Station mark, a standard disk stamped LONGFELLOW 1961, set in the top of a 10 X 10 inch square concrete monument, projecting about 2 inches from ground surface. It is 37.0 feet west of a woods road; 19.8 feet northwest of a 10 inch hickory tree with triangle blaze.

Reference Mark No. 1, a standard disk stamped LONGFELLOW NO. 1 1961, set in the top of a 10 X 10 inch square concrete monument, and is flush with ground surface. It is 31.0 feet east of center of woods road; 80.0 feet east-northeast of a 10 inch hickory tree with triangle blaze.

Reference Mark No. 2, a standard disk stamped LONGFELLOW NO. 2 1961, set in the top of a 10 X 10 inch square concrete monument, projecting about 1 inch from ground surface. It is 7.5 feet west of center of woods road; 51.6 feet south-southeast of a 10 inch hickory tree with triangle blaze.

Reference Mark No. 3, a standard disk stamped LONGFELLOW NO. 3 1961, set in the top of a 10 X 10 inch square concrete monument, projecting about 3 inches from ground surface. It is 6.0 feet northeast of a dim woods road; 4.8 feet southeast of a 10 inch pine tree.

Boundary Monument No. 35, a 12 inch square monument with a coat of arms on the east and west side, and projects 30 inches from ground surface. It is 6.0 feet south-east of the center of woods road; 66.0 feet east of a 10 inch hickory tree with a triangle blaze.

DE	38° 58' 03.8050"	75° 44' 03.4226"	18.0 METERS
HD			59 FEET

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH (from mark)	CODE
DE	0700	409,688.02	352,584.69	175° 30' 55.7"	0700
HD	1900	1,159,868.54	415,615.24	174° 43' 16"	1900

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  (OR  $\Delta$ )  $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
SHORT	175° 30' 55.7"	175° 42' 55"	0700
SHORT	175° 30' 55.7"	174° 43' 16"	1900



HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: MARSH

STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R.W. Tomlinson

YEAR: 1962

Described by E.G. Kaepari -

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 26.78 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 29.15 METERS;  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

CLASS	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
11a	CHARLES Reference Mark 3	SN	178.34	54.357	0 00 0.0
11a	Reference Mark 2	SN	89.43	27.258	48 25 19.4
11a	Boundary Monument	ENS (Trav.)	(111.84)	34.089	58 39 23.7
11a	Reference Mark 1	SSB	79.61	24.266	247 27 29.9
					345 47 43.0

Station is located about 6.0 miles northeast of Federalsburg Maryland, 6.5 miles west-northwest of Bridgeville Delaware. On the property owned by Mr. John Williams.

To reach the station from the post office in Denton Maryland, go southeasterly on State Highway 404 for 8.4 miles to a crossroad, this is 0.4 mile before reaching the Fire Tower at the State Line, turn right, go southerly on the macadam road for 2.6 miles to a crossroad and store on the left, continue southerly for 0.4 mile to a driveway on the left, turn left, on the driveway for 0.05 mile to the end of two chicken coops and woods road, here go northerly on woods road for 0.3 mile to station on the left.

Station Mark, a standard disk stamped MARSH 1962, set in the top of a 5/8 inch copper rod, projecting 4 inches from the ground. It is 4.0 feet south of a standard metal witness post; 55.0 feet north of a woods road; 28.0 feet north of a 18 inch oak tree with a triangle blaze.

Reference Mark No. 1, a standard disk stamped MARSH NO. 1 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 6 inches from the ground. It is 24.0 feet south of a woods road; 83.0 feet south of a standard metal witness post; 18.0 feet southwest of a 24 inch oak tree.

Reference Mark No. 2, a standard disk stamped MARSH NO. 2 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 6 inches from the ground. It is 32.5 feet north of a woods road; 89.4 feet west of a standard metal witness post; 48.0 feet north of a 40 inch oak tree.

Reference Mark No. 3, a standard disk stamped MARSH NO. 3 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 6 inches from the ground. It is 8.0 feet north of a woods road; 2.0 feet east of a standard metal witness post; 45.0 feet west of a 40 inch oak tree; 18.0 feet west of a 10 inch pine tree.

Boundary Monument No. 21, a 12 X 12 inch square monument, with the letter H on the west side and P on the east side, projecting about 30 inches from the ground. It is 9.0 feet south of a woods road; 3.5 feet west of a 10 inch oak tree; 12.5 feet northeast of a 6 inch holly tree.

Part Two: North-South Boundary

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MARSH

STATE: MARYLAND

YEAR: 1962

SECOND-ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 45 51.3238	ELEVATION	7.0 METERS
GEODETIC LONGITUDE	75 43 05.9460		23 FEET

STATE COORDINATES (FATH)

STATE & ZONE	CODE	N	E
DE	0700	413,982.94	278,465.17
MD	1900	1,165,447.95	341,585.31

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COORD
CHARLES	355 59 08.3	356 10 28	0700
CHARLES	355 59 08.3	355 10 52	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1922 DATUM  
K

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MD DEL CORNER RM 4  
ESTABLISHED BY: R.W. Tomlinson YEAR: 1962 STATE: Maryland-Delaware-DELAWARE MARK ALSO ☐  
RECOVERED BY: Lewis A. Lapine YEAR: 1974 COUNTY: Wicomico-Sussex  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: Delmar, Delaware 6.0 miles West.  
HEIGHT OF TELESCOPE ABOVE STATION MARK 92.1 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK 100.5 FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
COOPER 1934 RM 4				0 00 00.00
MD DEL CORNER 1932 (Traverse Dist.)	E	(30.87)	9.411	41 22 48.66
RM 2	SSE	81.95	24.978	107 26 46
RM 3	SW	153.68	(46.842)	184 05 28
Azimuth Mark	W	0.3	0.091	210 48 24.0
RM 2 to RM 3		156.30	(47.640)	

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

The station mark, reference marks 2, 3 and the azimuth mark were re-covered and found in good condition. Boundary Monument Number 0 or 35-B that MD DEL CORNER 1932 disk is set, is leaning to the south as described in 1962. The horizontal directions and the distance checked the 1962 data adequate. A complete new description follows.

The station is located about 6.0 miles west of Delmar and at the south-west corner of Delaware and at the south end of the north and south line between Delaware-Maryland. It is on property owned by the States.

To reach the station from the railroad crossing and State Road 54 in Delmar, go west on State Road 54 for 4.8 miles to a Y-fork, continue west on State Road 54 for 1.2 miles to the Maryland-Delaware Corner and the station on the right. Continue west on State Road 54 for 0.3 mile to Old Railroad Road and the azimuth mark on the left.

Station marks are standard reference mark disks stamped MD DEL CORNER NO 4 1932. The surface disk is set in the top of a 12 inch square concrete monument that is 18 inches below the ground surface. It is 105 feet north of the centerline of State Road 54, 32 feet south of an 8-inch oak tree, 26 feet west of the northwest corner of a brick pillar, 15 feet east of a cedar tree and 8 feet west-northwest of an 8-inch maple tree. The underground disk is set in the top of an irregular mass of concrete 40 inches below the ground surface. Note 11a.

Reference mark 2, a standard disk stamped MD DEL CORNER NO 2 1932, is set in the top of a 12 inch square concrete monument that is 18 inches below the ground surface. It is 26 feet north of the centerline of State Road 54, 23 feet east of a 6-inch maple tree and 21 feet west of a 4-inch maple tree. Note 11a.

Reference mark 3, a standard disk stamped MD DEL CORNER NO 3 1932, is set in the top of a 12 inch square concrete monument that projects 2 inches above the ground surface. It is 27 feet north of the centerline of State Road 54. Note 11a.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MD. DE. CORNER RM 4  
STATE: MARYLAND YEAR: 1962  
SOURCE: G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION		9.3 METERS 31 FEET
		38 27 35.8687	75 41 38.8436	

STATE & ZONE	CODE	STATE COORDINATES (feet)		E (from 1922)
		N	E	
DE	0700	420,547.38	167,622.61	0 10 21
MD	1900	1,173,931.45	230,877.69	0 04 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi \cos \Delta \phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)		CODE
		79 13 32.7	79 23 54	
AZIMUTH MARK	79 13 32.7	78 24 22	0700	

Azimuth mark, a standard disk stamped MD DEL CORNER 1932 RESET 1962, is set in the top of a 12 inch square concrete monument that projects 2 inches above the ground surface. It is 55 feet south of the centerline of State Road 54, 24 feet east-southeast of the center of Old Railroad Road, 5 feet northeast of a stop sign and 1 foot east of a metal witness post. Note 16a.

MD DEL CORNER, a standard disk stamped MD DEL CORNER 1932, is cemented in a drill hole in the top of Boundary Monument Number 0 or 35-B that projects 30 inches above the ground surface. It has a 12 by 12 foot shelter erected over the monument. It is 3.8 feet south of Monument 35-A, which was established in 1760.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

M.D.P. CORNER (Md.-Del.-Pa., J.B.Jr., 1935)--Station is located 10 miles SE of Jennersville, Pa., by road at the junction of the Maryland-Delaware State line with the Pennsylvania or Mason-Dixon line. It is about 0.15 mile E of the point where Pa. State Route 796 crosses the Maryland-Pennsylvania State line, on property belonging to Leon Garrett and tenanted by George Hendrickson. It is 75 feet SW of the SW corner of Hendrickson's house, 35 feet SE of the SE corner of garden plot and 80 feet N of creek bottom. Surface, underground. Reference mark No.1 and azimuth mark are standard bronze disks set in concrete as described in notes 1a, 7a and 11a.

Reference mark No.1 is 46.441 meters (152.50 feet) N of the station and 0.5 foot S of fence line.

Reference mark No.2 is 28.159 meters (92.39 feet) S of the station in a 15-inch square stone post projecting 1 1/2 feet above the surface and about 6 feet S of the center of the creek bed. This post marks the state boundary.

The azimuth mark is located about 0.15 mile W of the station, 6 paces E of the center line of Route 796, 23 paces N of the state line and 12 paces from telephone pole 1615.

To reach from Jennersville, go S on Route 796 for 10 miles to the Pennsylvania-Maryland State line. Turn left on a dirt road about 10 yards N of the state line and go 0.15 mile to the station on left.

A 100-foot tower required for 1935 observation.

NOTE: The position of Reference mark No.2 checks that of NORTHEAST CORNER OF MARYLAND 1892.

OBJECT	DISTANCE	DIRECTION
MILFORD	feet	0°00'00.0
R.M. 2	92.39	87 37 30.1
Az. Mk.	0.15 mile	167 42 31.38
R.M. 1	152.50	220 31 10.0

U. S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: M.D.P. CORNER  
ESTABLISHED BY: J.B. Jr. YEAR: 1935 STATE: Pennsylvania  
RECOVERED BY: R.W. Tomlinson YEAR: 1961 COUNTY: Chester

HEIGHT OF TELESCOPE ABOVE STATION MARK 35 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 38 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
MILFORD 1935				0 00 00.00 -
Reference Mark 2 (Traverse 28.094 m.)	S	92.39 -	28.008 -	87 35 00.2 -
Reference Mark 3	WSW	102.285 -	31.176 -	162 32 21.3 -
Azimuth Mark	N	Approximate 0.15 mile		167 43 32.0 -
Reference Mark 1	NW	152.45 -	46.466 -	221 33 40.2 -

The station mark, Reference mark number 1 and 2 was recovered in good condition. The azimuth mark was recovered but found to be slightly leaning, due to the location of the mark it could have been hit by a road grader or a snow plow. It was still in good condition and used as it is. A difference in direction to the azimuth mark was 00 00 59.92 seconds.

A complete description follows:  
The station is located 0.15 mile east of the point where the Delaware State Highway 896 crosses the Delaware and Pennsylvania line, 4.5 miles north-northwest of Newark, Delaware, 6.0 miles southeast of New London, Pennsylvania at the location where the Delaware, Maryland and Pennsylvania State Lines junctions.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MDP CORNER

STATE: PENNSYLVANIA YEAR: 1935

SECOND ORDER

SOURCE: G-12731

GEODETIK LATITUDE	GEODETIK LONGITUDE	ELEVATION		77.9 METERS FEET
		39 43 20.4322	75 47 10.1432	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	B (FOR Δ & ANGLE)
PA S	3702	2,551,629.42	147,834.19	+ 1 16 20
DE	0700	395,282.42	627,504.11	- 0 16 16
MD	1900	1,140,686.64	690,238.50	+ 0 45 36

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B (FOR Δ &) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIK AZIMUTH (from north)		PLANE AZIMUTH		CODE
	81 30 43.9	80 14 23	81 30 43.9	80 14 23	
AZIMUTH MARK	81 30 43.9	81 45 00	81 30 43.9	81 45 00	3702
AZIMUTH MARK	81 30 43.9	80 45 08	81 30 43.9	80 45 08	1900

To reach the station from the post office in Newark: go west on Main Street for 0.4 mile to a triple fork at a railroad crossing, keep the extreme right fork, State Highway 896 and go northwest for 3.5 miles to the Pennsylvania State Line and the azimuth mark located on the right. Continue north for 0.05 mile to a field road right. Turn right and cross a field for 0.10 mile then bear right down the hill for about 0.05 mile to the edge of the timber and the station as described.

The station mark, a standard disk stamped M.D.P. CORNER 1935, is cemented in top of a square concrete monument which projects 5 inches above the ground surface and described by note 1a, 7a. It is 80.0 feet north of a small creek bed.

Reference mark 1, a standard disk stamped M.D.P. CORNER NO 1 1935, is cemented in top of a square concrete monument which projects 4 inches above the ground surface and described by note 11a. It is 232.0 feet north-northwest of the creek bed and about 13.0 feet higher than the station mark.

Reference mark 2, a standard disk stamped M.D.P. CORNER NO 2 1935, is cemented in a drill hole in the top of a 15-inch stone which projects about 1 1/2 feet above the ground surface. This stone is a boundary marker. It is 12.0 feet south of the small creek bed, 12.0 feet southwest of a 30-inch poplar tree and about 8.0 feet lower than the station mark. Reference mark 3, a standard disk stamped M.D.P. CORNER NO 3 1935, is cemented in top of a square concrete monument which projects 2 inches above the ground surface. It is 85.0 feet north of the creek bed and about 3.0 feet higher than the station mark.

Azimuth mark, a standard disk stamped M.D.P. CORNER 1935, is cemented in top of a square concrete monument which is flush with the ground surface. It is 1.7 feet south of a standard metal witness post and marker, 15.0 feet east of the center line of State Highway 896, 33.0 feet north of a powerline pole number 1615 and 57.8 feet north of a Maryland and Pennsylvania boundary marker which projects about 6.0 feet above the ground surface.

R



## HORIZONTAL CONTROL DATA

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODESIC SURVEY, NATIONAL GEODESIC SURVEY

JUL 1977

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

MARYDEL (Queen Anne Kent), Del., C.D.M., 1932) -- Located on Maryland-Delaware boundary line about 1.2 miles NE of Templeville, Maryland, and 0.1 mile SE of highway leading from Templeville, Maryland, to Hartly, Delaware, on property owned and occupied by Mr. Fred Meake. Station is marked by a regulation station disk set in the top of sand stone boundary monument 12 inches square and about 2 1/2 or 3 feet above ground. When originally visited, this monument was very unsteady, but owner stated that a survey which had been made showed that stone was in its correct position. Fraction of stone was held fixed. It was then dug out and underground mark was set. The monument was then set in its original position and reinforced by concrete placed around base. It is now very steady. On one face of stone, there is an "M", and on opposite face is a "P". At one time this part of Delaware was part of Pennsylvania. Station is in open field just SW of Mr. Meake's house 28.2 meters SW of SW corner of house, 15.8 meters WSW of maple tree in front of house.

Underground and reference marks are standard bronze disks set in concrete as described in notes 7e, and 11e. Reference mark No. 1 is SE of station at NW corner of chicken house.

Reference mark No. 2 is in fence line on W side of field, SW of station, 6.7 meters S of 12-inch cedar tree in fence line. Reference mark No. 3 is WSW of station, 6 meters SE of center line of highway, at NE end of entrance to lane, 1 meter NE of 8-inch leaning cedar tree which is the NE gatepost of gate to lane. From Templeville, Maryland, take paved road to Hartly 1.2 miles NE to State Line, then right or SE 0.1 mile to Mt. Meake's house and station.

OBJECT	DISTANCE	DIRECTION
HARTLEY (1896)		0°00'00"00
R.M. No. 1	142.28 feet	92 17 05
R.M. No. 2	332.9 feet	191 34 34.0
R.M. No. 3	approx. 1 1/4 mile	199 03 24.4
Height of signal above station mark	- 34 meters.	
Height of telescope above station mark	- 31 meters.	

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: MARYDEL  
ESTABLISHED BY: O. D. M.  
RECOVERED BY: O. L. NOVAK  
YEAR 1932  
YEAR 1978  
STATE: Maryland-Delaware  
COUNTY: Md., Queen Anne  
Del., Kent  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 2 (Ranger 111 distance)	SW	73.24	22.324	0 00 00.00
RM 6	ESE		152 27 29	

The station mark and reference mark 2 were recovered and found in good condition. Reference marks 1, 3, 4 and 5 were not found. They were reported destroyed by Maryland Highway Department. A new reference mark 6 was established at this date. There is no place to set a azimuth mark except within 0.15 mile and reference mark 2 is nearly that distance.

A complete new description of the station follows.  
The station is located on the Maryland-Delaware line about 10 miles west of Dover Delaware, 1 1/2 miles northeast of Templeville and just south of State Highway 11. The property owner's name is unknown.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION MARYDEL BURY HON 47 DEL MD  
STATE DELAWARE - MARYLAND YEAR 1932

FIRST ORDER

SOURCE G-12731

UNOFFICIAL ELEVATION GEODETIC LONGITUDE	39 08 30.3858 75 44 52.7609	ELEVATION NO CHECK	20.31 METERS 66.6 FEET
STATE COORDINATES (feet)			
STATE & ZONE	CORR	N	E
DE	0700	406,072.05	415,990.98
MD	1900	1,155,102.80	478,965.20
			- 0 12 13 + 0 47 09

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE 6-FIGURE FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		PLANE AZIMUTH (From north)		C/OBS
	76 11 34.6	76 11 34.6	76 24 07	76 24 07	
AZ MK RM 3					0700
AZ MK RM 3			75 24 26	75 24 26	1900

To reach the station from a point where State Highway 11 crosses the Maryland-Delaware line, go west on State Highway 15 for 0.05 mile to a side road left, turn left and go south on a farm road for 0.15 mile to a farm house and the station just northwest of the house and near a outside fireplace.

The station mark is a standard disk etamped MARYDEL 1932, set in the top of a 12-inch square Maryland-Delaware boundary monument which projects 18-inches. It is 16 feet north of the chimney of the fire place, 35 feet north of the northwest corner of the farm house and 65 feet west of the farm road. (NOTE described)  
Reference mark 2 is a standard disk etamped MARYDEL NO 2 1932, set in the top of a 12-inch square concrete monument which projects 6-inches. It is in a fence line across the open cultivated field to the west of the station. It is 3 feet west of the west edge of the cultivated field, 6 feet east of a small ditch and 22 feet south of a 14-inch cedar tree. (NOTE 11e)  
Reference mark 6 is a standard disk etamped MARYDEL 1932 NO 6 1973, cemented in a drill hole in a large concrete slab in the center of the farm lane. It is 85 feet northeast of the fireplace chimney and 96 feet northeast of the northwest corner of the farm house. (NOTE described)



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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
NATIONAL OCEAN SURVEY  
JUL 1977

NAME OF STATION: MILLFOND STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.70 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30.12 METERS.

OBJECT	BEARING	DISTANCE feet	DIRECTION	
			°	'
16a Schepenis	SE	Approx. 0.17 mile	0	00 00.00
11a Azimuth Mark	SSE	91.62	136	14 08.1
11a Reference Mark 1	SW	27.925	161	37 40.1
11a Reference mark 2		135.511	226	03 52.5

The station is located in a low wooded area along the south side of the Mud Hill Pond of the Choptank Mills, 1.5 miles east-southeast of Henderson, Maryland, 4.0 miles south of Maryland, Maryland-Delaware and on State Property.

To reach the station from the post office in Henderson, Maryland, go southeasterly on the main macadam road for 0.6 mile to a side road left and the station located on the left.

The station mark is a standard disk stamped MILLFOND 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 4.7 feet northwest of a standard metal witness post and marker, 39.0 feet west-southwest of the approximate center of the gravelled road, 45.6 feet northwest of a powerline guy pole number 526, 71.0 feet north of the approximate center of the macadam road and 91.0 feet north of a telephone pole number 526.

Reference mark 1 is a standard disk stamped MILLFOND NO 1 1961, set in top of a square concrete monument which projects about 2 inches above the ground surface. It is 1.7 feet east of the telephone pole number 526, 22.0 feet south of the approximate center of the macadam road, 87.3 feet south-southeast of the witness post and about the same elevation as the station mark.

Reference mark 2 is a standard disk stamped MILLFOND NO 2 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.8 feet south of a telephone pole number 527, 24.0 feet south of the approximate center of the macadam road, 135.6 feet southwest of the witness post and is about 6.5 feet higher than the station mark.

To reach the azimuth mark from the station, go southeasterly on the macadam road for 0.17 miles to the azimuth mark on the right as described.

The azimuth mark is a standard disk stamped MILLFOND 1961, set in top of a square concrete monument which projects about 5 inches above the ground surface. It is 1.8 feet north of a standard metal witness post and marker, 6.5 feet west-northwest of a 6-inch ash tree and 18.0 feet south of the approximate center of the macadam road.

Building form; Albert Sulfridge;

The Delaware-Maryland Boundary Monument No. 42 was searched for but not recovered.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MILLFOND STATE: Maryland YEAR: 1961 SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 04 15.7989	ELEVATION	12.7 METERS
GEODETIC LONGITUDE	75 44 32.5912		42 FEET

STATE COORDINATES (FATH)				
STATE & ZONE	CODE	X	Y	# OF $\Delta$ & ANGLE
DE	0700	407,518.87	390,227.94	- 0 12 19
MD	1900	1,157,046.58	653,213.24	+ 0 47 22

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  OF  $\Delta$   $\beta$  FORMULA NEGLECTING THE SECOND TERM.

TOSTATIONOR OBJECT	GEODETIC AZIMUTH (from true)		PLANE AZIMUTH* (from true)		CODE
	°	'	°	'	
AZIMUTH MARK	312	54 30.9	313	06 50	0700
AZIMUTH MARK	312	54 30.9	312	07 09	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: MILLFOND

Maryland-

ESTABLISHED BY: L.A.L.

YEAR: 1961

STATE: Delaware

RECOVERED BY: C.L. Novak

YEAR: 1976

COUNTY: Caroline-Kent

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 1/2 miles east-southeast of Henderson

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
AZIMUTH MARK (VG)	SE	(0.2 mile)		0 00 00.00
RM 1	SSE	91.62	27.929	25 24 06
RM 2	SW	135.47	41.291	89 49 53
BOUNDARY MONUMENT 42	E	13.08	3.988	313 32 15.7

The station and all marks were recovered and found in good condition. The distances and directions to all marks agreed with the previous observations.

The Maryland-Delaware Boundary Monument number 42 was set at this date, see description thereof.

## HORIZONTAL CONTROL DATA

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

CONDUCTED BY THE  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: MOFFETT

STATE: Maryland

COUNTY: Queen Anne's

CHIEF OF PARTY: R. W. Tomlinson

YEAR: 1961

Described by: R. L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 31.50 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 33.92 METERS.

STATION MARK	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
11a	Boundary Monument	NE	391.58	119.353	0 00 00.00
11b	Reference Mark 1	S	95.58	28.523	34 38 41.6
11c	Reference Mark 2	WNW	89.65	27.320	181 46 11.9
16a	Azimuth Mark	NW	Approx. 0.25 mile	285 38 59.1	326 42 30.0

The station is located in the north edge of a heavy wooded area, 4 1/2 miles east-southeast of Millington, Maryland, 6.0 miles northwest of Kenton, Delaware and on property owned by Mr. George Moffett.

To reach the station from the crossroads in Sudlersville, go east on State Highway 300 for 3.0 miles to a gravelled side road left, turn left and go north on the gravelled road for 0.9 mile to a crossroads, continue north on the macadam road for 3.0 miles to the State line and the end of the pavement, continue north on the gravelled road for 0.15 mile to forks of the road, take the left fork and go north on the gravelled road for 0.55 mile to the residence of Mr. Moffett. On the left, continue north for about 150 feet to the southeast corner of the barn, turn right and go east on a field lane for 0.05 mile to a gate, \*to reach the azimuth mark from this point, go north along the east side of a north and south fence line for 0.2 mile to the east and west fence line and the azimuth mark is located in the northwest fence corner, continue east through the gate and go east on the field lane for 0.15 mile to the station on the right as described.

The station mark is a standard disk stamped MOFFETT 1961, set in top of a square concrete monument which projects about 1 inch above the ground surface. It is 6.2 feet southwest of a standard metal witness post and marker, 69.6 feet north-northeast of a 10-inch triangular blazed oak tree and 117.6 feet south-southwest of a southwest fence corner.

Reference mark 2 is a standard disk stamped MOFFETT NO 2 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 94.2 feet west of the witness post, 111.0 feet north-northeast of the 10-inch triangular blazed oak tree and 141.6 feet southwest of the southwest fence corner.

Reference mark 1 is a standard disk stamped MOFFETT NO 1 1961, set in top of a square concrete monument which is flush with the ground surface. It is 33.6 feet southeast of the 10-inch triangular blazed oak tree, 96.9 feet west-southwest of the witness post and 210.0 feet south-southwest of the southwest fence corner.

Azimuth mark is a standard disk stamped MOFFETT 1961, set in top of a square concrete monument which is flush with the ground surface. It is 1.2 feet east-southeast of a standard metal witness post and marker, 11.0 inches south of an east and west fence line, 1.8 feet east of a north and south fence line and 2.0 feet east-southeast of the T-junction in the fence line.

Boundary Monument No. 54 is a 12 X 12 inch granite stone marked W and P and projects about 30 inches above the ground surface. The monument has several bullet marks and chipped slightly on the corners. The monument is considered in good condition but leans slightly south. It is located on a small knoll, in a north and south property fence line about 1.75 paces north-northeast of the station site.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MOFFETT

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

COORDINATE	39 14 32.3522		ELEVATION	18.2 METERS
	75 45 24.6898	60 11.1		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	B OR Δ OR ANGLE
DE	0700	403,643.76	652,622.01	- 0 12 55
MD	1900	1,152,088.77	515,527.93	+ 0 46 49

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B OR Δ OR FORMULA NEGLECTING THE SECOND TERM

STATION OR OBJECT	DEODIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	143 51 16.4	143 51 16.4	144 04 11	143 04 27	
AZIMUTH MARK					0700
AZIMUTH MARK					1900

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH ATLANTIC AREA 1977 DATA

OAK GROVE (Sussex-Caroline Counties, Del.--Md., J.D.Jr. 1934)--  
The station is a square limestone monument projecting 24 inches  
above ground, a cross on top marks the station. This second-  
order station is approximately 150 yards W of counting factory,  
54.3 feet NW of a 40-inch oak tree, 32.6 feet NE of the center  
line of the main railroad track, and 2.05 feet NE of a Maryland-  
Delaware Boundary Marker. The station marker line an "H" on its W  
side and a "P" on its E side.

The Maryland-Delaware Boundary Marker is true marked "P D &  
W R R -- V.B. 3 -- HARYLAND -- CAROLINE CO." on the W side and  
"P B & W R R -- V.B. 1 -- DELAWARE -- SUSSEX CO." on the E side.  
The boundary marker projects about 4 feet above ground.

Reference marks are standard bronze disks set in concrete as  
described in note 11a.

Reference mark No. 1 is 240.26 feet NE of the station, and 1  
foot W of a corner fence post. The mark projects 6 inches above  
ground and is stamped "OAK GROVE NO. 1 1934." Reference mark No. 2  
is 146.69 feet E of the station, 66.15 feet SW of a 12-inch oak  
tree, and 3.67 feet NW of the NW corner of a brick house occupied  
by employees of a canning factory. The mark projects 6 inches  
above ground and is stamped "OAK GROVE NO. 2 1934." Reference mark  
No. 3, azimuth mark, is approximately 0.5 mile SW of the station,  
approximately 100 yards SE of a white 2-story frame house, about 3  
paces S of the center line of the dirt road, and 1 pace E of tele-  
phone pole No. 27. The mark projects 6 inches above ground and is  
stamped "OAK GROVE 3 1934."

To reach the station from the bridge over the Nantuxoke River  
on U.S. Highway 13 at Seaford go N on U.S. Highway 13 for about  
0.5 mile to a Y-road which is the junction of State Highway 20,  
turn left (W) on State Highway 20 for about 4.7 miles to a T-road  
N and a Pyrol gasoline sign in the NW angle, turn right (N) on a  
tar road for about 1.5 miles to a railroad crossing, turn left on  
the N side of the crossing and follow a dirt road along the track  
for about 0.2 mile to the station.

OBJECT BEAFORD DISTANCE 0+00+00:0

R.M. No. 3 Az. Mk. (SW) 0.5 mile 99 55 48.95  
approximately 240.26 feet 295 30 25.0  
R.M. No. 1 (NE) 146.69 feet 352 16 01.7  
R.M. No. 2 (E)  
A 103-foot tower will clear all lines observed.

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC SURVEY

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: OAK GROVE (BOUNDARY MONUMENT NO. 14)  
ESTABLISHED BY: J.B. Jr. YEAR: 1934. STATE: Delaware-Maryland-  
RECOVERED BY: R.V. Tealinson - YEARS: 1962. COUNTY: Sussex - Caroline -

OBJECT	BEARING	DISTANCE		SECTION
		FEET	METERS	
WHITE 1934 - Azimuth Mark	SNW -	Approx. 0.5 mile	800.00	23 24 26.0 -
Reference Mark 1	NE -	240.312	73.247	219 03 33.2 -
Reference Mark 2	E -	146.690	44.711	215 48 33.7 -
Reference Mark 4	SE -	150.520	42.225	332 02 25.6 -

HEIGHT OF TELESCOPE ABOVE STATION MARK 30.93 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 33.43 METERS.  
DISTANCES AND DIRECTIONS TO ADJUTANT MONUMENTS AND REFERENCE MARKS AND ADJUTANT MONUMENT OBJECTS WHICH CAN BE SEEN  
FROM THE GROUND AT THE STATION

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION OAK GROVE, RURY MON 14 DEL MD

STATE DELAWARE - MARYLAND YEARS 1934

SECOND ORDER

SOURCE G-12731

GEODETIC CLASSIFICATION OF GEODETIC MONUMENT	38 39 46-4537 75 42 35-8620		ELEVATION	16.5 METERS 48 FEET
	STATE COORDINATES (FEET)			
STATE & LINE	COUNT	E	N	S
DE	0700	416,247.70	261,565.01	- 0 11 00
MD	1900	1,168,352.13	306,711.77	+ 0 48 35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE SINE &amp; COSINE RULES FROM THE SECOND LINE

ELEVATION ON FACE	GEODETIC AZIMUTH (FROM MON)	PLANE AZIMUTH (FROM MON)	TIME
AZ MK RH 3	19 56 23.4	20 07 23	0700
AZ MK RH 3	19 56 23.4	19 07 49	1900

The station mark, reference marks 1, 2, and 3 was recovered as described and in good condition. A building is now on line to reference mark 2 and could not be assured to but was observed to. Reference mark 4 was established. It is located 2.7 feet north of a telephone pole, 19.2 feet southeast of the approximate center of the railroad tracks and 55.2 feet southeast of the southeast corner of a slender block building.

The description of to reach the station was adequate.

The monument is a 12 X 12 inch limestone monument marked with the letters M and P and projects 24 inches above the ground surface. A cross mark is scribbled on the apex of the monument and used for triangulation station OAK GROVE 1934. The monument was recovered in good condition. It is located 2.05 feet northwest of the Caroline-Sussex County Line marker, 32.6 feet northeast of the approximate center of the railroad tracks, 54.3 feet west-northwest of a 40-inch oak tree, 150 yards west of a canning factory, 2.0 miles north of Reliance, 1/2 mile southeast of Federalsburg, 3 3/4 miles west-northwest of Seaford and on property owned by W & R Kirwin of Cambridge, Maryland.



## HORIZONTAL CONTROL DATA

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SERVICE

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

DEPARTMENT OF COMMERCE  
U S COAST AND GEODETIC SURVEY  
Worms 188  
Nov Aug 1942

### DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: OLAB  
STATE: Maryland  
COUNTY: Cecil.

CHIEF OF PARTY: R. W. Tomlinson  
YEAR: 1961  
Described by: H.W. Larabee

STATE MARYLAND YEAR 1901

## SECOND OPINION

G-12731

NOTES.	HEIGHT OF TELESCOPE ABOVE STATION MARK.		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION.		HEIGHT OF LIGHT ABOVE STATION MARK.		BEARINGS
	Surface-station mark.	Underground-station mark	DISTANCE	DIRECTION	DISTANCE	DIRECTION	
7a.							
11a.	GLASGOW						
16a.	Reference mark 2		SW	163.03	49,690	0	00 00.0
11a.	Azimuth mark		SW/Approx.	0.5 alle		35	52 07
	Reference mark 1		N	85.18	25,962	38	29 23.3
	Boundary Monument No. 80 (traverse)		NE	26.54	8,088	183	31 14.2

The station is located about 2.5 miles east-northeast of Elkton Maryland, 2.5 miles northwest of Olagow, Delaware and on property owned by Mr. Ladis Laus Olah, who lives in the first home west of the station.

To reach the station from the Courthouse, turn left on Main Street and continue on a blacktop road for 1.2 miles to the intersection of a blacktop road on the right, southwest side of the highway. Turn right and go southeast on the blacktop road for 0.35 mile to powerline pole No. 70, a graveled side road intersect. Turn left and go southeast on a standard metal witness post and marker and the eximuth mark. Continue east on the blacktop road for 0.3 mile to a graveled driveway on the right, south, side of the highway. Turn into the driveway, thence left onto a dum track road and go southeast across a small meadow for 0.1 mile to the station and Boundary Monument No. 80.

The station mark, a standard disk stamped OLAH 1961, is set in top of a square concrete monument projecting about 1' inch above the surface of the ground. It is about 300.0 feet east of the southeast corner of Mr. Olah's house and 12.1 feet west of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped OLAH NO 1 1961, is set in top of a square concrete monument projecting about 4 inches above the surface of the ground. It is 325.0 feet east-northeast of the southeast corner of the farm house, 88.9 feet north of the standard metal witness post and marker and is about the same elevation as the station mark.

Reference mark 2, a standard disk stamped OLAH NO 2 1961; is set in the top of a square concrete monument projecting about 3 inches above the surface of the ground. It is 275.0 feet east-southeast of the southeast corner of the farm home, 165.0 feet southwest of the standard metal witness post and marker and is about the same elevation as the station.

The asphalt mark, a standard disk Stamped OIAH 1961, is set in the top of a square concrete monument projecting about 1 inch above the surface of the ground. It is 19.0 feet west of the approximate centerline of a north and south blacktop road, 18.0 feet north-northeast of the approximate center of a gravelled road intersection, 2.6 feet north of a standard metal witness post and marker and 2.0 feet north of powerline pole No. 70.

Boundary Monument No. 80, is the Mason-Dixon State Line Monument about 12 inches square at the base, tapered at the top. At the top and center of the monument is a nail, the nail head marking the center of the monument, on the monument sides is inscribed the coats of arms. The monument is in good condition and projects about 20 inches above the surface of the ground and is setting along the west side of a hedge

GEOGRAPHIC LATITUDE GEOGRAPHIC LONGITUDE	° ' "		ELEVATION	31-0000 105 0000
	39 37	11.2942 75 47 12.0671		
STATE COORDINATES (feet)				
STATE & ZONE	CODG	N	V	# (CM, S, M, INCH, F, I, F)
DE	0700	395,761.89	590,353.41	- 0 14 10
MD	1900	1,161,812.99	653,100.34	+ 0 45 42

PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA $\sin^2 \theta = \frac{1}{2} (1 + \cos 2\theta)$				CODE
	POSITION OF OBJECT	GEODESIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	
	AZIMUTH MARK	35 09 25.2	35 23 35	0700
	AZIMUTH MARK	35 09 25.2	34 23 44	1900



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
July-Aug 1964

NAME OF STATION: OTTS STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: J.C. Ellorbe YEAR: 1958 Described by: R.D.S.  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION  
7a Underground station mark

	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
16a	Grays Hill 2	N	approx.	0.15 mile	0 00 00
16a	Azimuth Mark	N	52.55	15.90	156 40 45.5
11a	BOUNDARY MONUMENT NO. 81 (traverse)	SSE	76.65	23.56	178 13 56.2
11a	Reference Mark No. 1				325 19 25

Station is about 4 miles southwest of Newark, Delaware, about 5 miles northeast of Elkton and near the Maryland-Delaware State line. Station is 40 feet west of the center of road, 27 feet northwest of the center of a wooden gate, 40 feet southwest of a large tree and 19.5 feet west of fence line. The mark is a standard triangulation station disk set in the top of a 12 X 12 inch concrete post which is flush with the ground and the disk is stamped OTTS 1958.

Reference Mark No. 1 is 54 feet south of the center of wooden gate and 22.5 feet west of the center of road. The mark is a standard reference mark disk set in the top of a 12 X 12 inch concrete post which is flush with the ground and the disk is stamped OTTS NO 1 1958.

Boundary Marker No. 81 is 21 feet west of the center of road and 12 feet north northeast of large tree. The mark is a 12 X 12 inch stone monument projecting about

18 inches with the letter W on the west side and the letter P on the east side.

Azimuth Mark is 13 feet northeast of the center of road, 1.5 feet east of witness post and 1 foot northeast of fence line. The mark is a standard azimuth mark disk set in the top of a 12 X 12 inch concrete post which projects about 4 inches and the disk is stamped OTTS 1958.

To reach station from the Post Office in Newark go west on main street for 0.4 mile to forks and railroad tracks. Take left fork and go southwest on Elkton Road for 2.4 miles to the Maryland-Delaware State line. Continue straight ahead for 0.15 mile to a side road left. Turn left and go south on gravel road for 0.5 mile to a T intersection. Turn left and go east for 0.15 mile. Turn right and go south for 0.35 mile to a driveway and azimuth mark on right. Continue southerly for 0.15 mile to the station on the right as described.

Form 326  
(11-6-55)  
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: OTTS  
ESTABLISHED BY: J.C.E.  
RECOVERED BY: C.F.O.

YEAR: 1958 STATE: Maryland  
YEAR: 1964 COUNTY: Cecil

Detailed statement as to the fitness of the original description, including marks found, stamping, changes made, and other pertinent facts:  
The station mark, reference marks and the azimuth mark were recovered as described and found to be in good condition.

Due to the Northeastern Expressway a new road is as follows:

To reach from the post office in Elkton, go east on Main Street and State Highway 281 for 2.6 miles to the Maryland - Delaware State line, continue 0.1 mile to a side road left, turn left, go north on the macadam road for 0.9 mile to top of the hill and station on the left as described.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: OTTS

STATE: MARYLAND YEAR: 1958

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 38 05.3147	ELEVATION	52.63 METERS
GEODETIC LONGITUDE	75 47 16.2687	NO CHECK	172.7 METERS

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
MD	1900	1,141,412.75	658,359.22
DE	0700	395,453.28	595,618.32
			4 0 45 39
			- 0 14 12

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA INJECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	175 38 28.2	174 52 49	175 38 28.2	175 52 41	
AZIMUTH MARK					1900
AZIMUTH MARK					0700

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL GEODETTIC SURVEY

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF PARTY: PARKER  
CHIEF OF PARTY: R.W. Tomlinson  
NAME OF STATION: PARKER  
STATE: MARYLAND  
YEAR: 1962  
SOURCE: G-12731  
SECOND ORDER

NAME OF PARTY: R. W. Tomlinson		Year: 1962	Described by: R. L. Wright	
NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	51	HEIGHT OF LIGHT ABOVE STATION MARK 34	
1a	Surface-station mark		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND MONUMENT OBJECTS WHICH CAN BE SEEN FROM THIS STATION.	
7a	Underground station mark			
	OBJECT	BEARING	DISTANCE	DIRECTION
	BURRS R.H. 4			0 00 00.00
	Des Boundary Monument	NE	(160.059) 48.7859	53 06 10.2
	11a Reference Mark 1	SE	188.46 226.962	146 01 07.9
	10a Azimuth Mark	SSW	Approx. 0.4 mile	201 10 29.4
	11a Reference Mark 2	NNW	87.00 226.518	336 27 51.6

The station is located in a pasture field, 1.0 mile north of Hickman, 6.0 miles southeast of Denton and on property owned by Mr. Oerl Parker.

To reach the station from the General Store in Hickman, Delaware-Maryland, go north on the macadam road for 0.65 mile to a side road left, turn left and go south on a macadam road for 0.15 mile to a southeast fence corner on the right and the azimuth mark located on the right, continue northwest on the macadam road for 0.25 mile to a farm road right, leading to an old farm house, turn right and go east on the farm lane for 0.1 mile to the farm house on the left and the station is located about 350 feet north-northeast of the farm house as described.

The station mark is a standard disk stamped PARKER 1962, set in top of a square concrete monument which is about 12-inches below the ground surface. It is 16.4 feet south of a standard metal witness post and marker, 18.0 feet south of an east and west fence line and 30.0 feet east-southeast of a small twin cedar tree.

Reference mark 1 is a standard disk stamped PARKER NO 1 1962, set in top of a square concrete monument which projects about 3 inches above the ground surface. It is 3.6 feet south of the east and west fence line, 59.6 feet west of a 12-inch elm tree and 89.3 feet east of the witness post.

Reference mark 2 is a standard disk stamped PARKER NO 2 1962, set in top of a square concrete monument which projects about 3 inches above the ground surface. It is 4.2 feet south of the east and west fence line, 4.2 feet south of an 8-inch cedar tree and 86.3 feet west of the witness post.

Azimuth mark is a standard disk stamped PARKER 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.0 foot south of a southeast fence corner, 2.5 feet southwest of a standard metal witness post and marker and 18.0 feet west of the approximate center of a gravelled road.

Boundary Monument No. 27, a 12 X 12 inch limestone monument projecting about 18 inches above the ground surface and marked with the letters M and P. The monument is considered in good condition except small chips on the corners and is leaning slightly to the south. It is located 154.0 feet north of the witness post, 95.0 feet south of a fence line and 153.6 feet north of a fence line. Point observed end traversed to was a small cross mark scribbled on the apex of the monument.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: PARKER  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: L.P.S.  
YEAR: 1962  
STATE: Maryland  
COUNTY: Caroline  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1.0 mile north of Hickman  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE	DIRECTION
Azimuth Mark 1962	SSW	approx. 0.4 mile	00 00 00"
Azimuth Mark 1970	SSW	approx. 0.4 mile	0 23 37.3
Reference Mark	NNW	86.99	26.513 135 16 58
Boundary Monument	NE	160.09	(48.795) 211 53 23.3
Reference Mark	SE	88.45	(26.958) 304 50 16

STATE & ZONE	CODE	X	Y	ELEVATION	16.4 METERS
DE	0700	412,102.57	310,116.44		54
MD	1900	1,163,019.21	373,197.55		00

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH* (from mark)	CODE
AZIMUTH MARK	17 56 07.5	18 07 45	0700
AZIMUTH MARK	17 56 07.5	17 08 07	1900
AZIMUTH MARK 1970	18 19 44.8	18 31 22	0700
AZIMUTH MARK 1970	18 19 44.8	17 31 45	1900

Station was recovered as described and all marks were found to be in good condition. The State Highway Department requested that the azimuth mark be relocated because of highway improvements so a new azimuth mark was established and the old mark was then destroyed. The distance and directions to the reference marks was checked and found to be correct. A difference was found in the distance and in the direction to Boundary Monument No. 27. The mark is leaning to the south but is still firm in the ground. The original station description is adequate.

Azimuth Mark is 35 feet north of the centerline of gravel road, (to be improved) 1.0 foot west of fence and 1.0 foot north of steel witness post. The mark is a standard disk set flush in a concrete monument about 10 inches in diameter, projects about 2 inches and the disk is stamped PARKER 1961 1970. Note 16b. Mark is about 17 feet north of the old mark.

HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1977 DATUM

DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

NAME OF STATION: PEARSONS- State: Delaware County: Kent

CHIEF OF PARTY: R. W. Tomlinson .		YEAR: 1961.		Described by R. L. Wright-	
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 32.15 METERS.		HEIGHT OF LIGHT ABOVE STATION MARK 34.60 METERS.			
18	Surface station mark.	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
7a	Underground station mark				
	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
11a	BARCLAY 1905				
	Reference Mark 2	NNW	89.292	27.215	0 00 00.00
	Boundary Monument		396.20	117 25 08.6	
16a	Azimuth Mark	55 (traverse)	220.761	191 06 51.9	
			Approx. 0.25 mile	198 47 35.5	
11a	Reference Mark 1	SSW	91.60	27.920	333 36 06.5

The station is located in a small cultivated field, 5.0 miles west of Kenton, Delaware, 5.0 miles east-southeast of Millington, Maryland and on property owned by Mr. George Pearson.

To reach the station from the crossroads in Sudlersville, go east on State Highway 300 for 3.0 miles to a gravelled road left, turn left and go north on the gravelled road for 0.8 mile to a crossroad, continue north on the macadam road for 3.25 miles to the end of the macadam and the station located on the left as described.

The station mark is a standard disk stamped PEARSONS 1961, set in top of a square concrete monument which is about 20 inches below the ground surface. It is 28.0-foot east of a north and south fence line, 28.9-foot east of a standard metal witness post and marker, 45.0-foot west-southwest of the approximate center of the gravelled road and 163.6-foot-southwest of a small sign board PEARSONS GROVE.

Reference mark 1 is a standard disk stamped PEARSONS NO 1 1961, set in top of a square concrete monument which is about 1 inch below the ground surface. It is 1.0-foot east of the north and south fence line, 26.0-foot west of the approximate center of the gravelled road, 66.6-foot-south of the witness post and 285.0-foot southwest of the small sign board PEARSONS GROVE.

Reference mark 2 is a standard disk stamped PEARSONS NO 2 1961, set in top of a square concrete monument which projects about 1 inch above the ground surface. It is 1.6-foot east of the north and south fence line, 85.3-foot north of the witness post, 113.4-foot west-northwest of the approximate center of the gravelled road and 157.7-foot west of the small sign board PEARSONS GROVE.

Boundary Monument No. 53 is a 12 X 12 inch granite stone marked N and P and projects about 30 inches above the ground surface. The monument is in good condition. It is located in the north and south fence line, about 75 yards north-northwest of the station site and 1.2 foot east of the north and south fence line, 30.0-foot south of a northeast fence corner and about 115.0-foot west of the approximate center of the gravelled road.

To reach the azimuth mark from the station, go north on the gravelled road for 0.15 miles to a crossroad, turn right and go 0.1 mile to the azimuth mark on the right.

The azimuth mark is a standard disk stamped PEARSONS 1961, set in top of a square concrete monument which projects 1 inch above the ground surface. It is 1.2-foot south of a standard metal witness post and marker, 1.5-foot west of a powerline pole # 35, 3.0-foot north of the north edge of a cultivated field and 27.0-foot south of the approximate center of the gravelled road.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION PEARSONS  
STATE DELAWARE  
YEAR 1961  
SOURCE G-12731  
SECOND ORDER

GEODETIC LATITUDE	39 13 39.6643	ELEVATION	19.4 METERS 64 FEET
GEODETIC LONGITUDE	75 45 17.1821		

STATE COORDINATES (feet)				
STATE & ZONE	CODE	N	E	PLANE AZIMUTH * (from north)
DE	0700	404,214.56	447,289.09	- 0 12 50
MD	1900	1,152,752.10	510,205.92	+ 0 46 54

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta_0 + \Delta \theta$  FORMULA SELECTING THE SECOND TERM.

STATION OR OBJECT				
		GEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
AZIMUTH MARK		240 10 42.0	240 23 32	0700
AZIMUTH MARK		240 10 42.0	239 23 48	1900



## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY  
JUL 1977

NAME OF STATION: PETERS STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961. Described by: M. W. Larabee

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS: 2  
HEIGHT OF TELESCOPE ABOVE STATION MARK 2 METERS: 2  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
DREW (CROW 1892) 1935			
11a Reference mark 1	NE	34.08	0 00 00.0
11a Boundary Monument	85 (traverse)	10.387	92 26 19
11a Reference mark 2	E	18.910	134 35 17.6
11a Azimuth mark	SW	36.23	275 13 07
	WSW	11.092	303 19 04.4

The station is located about 3.0 miles northeast of Elk Mills, Maryland, 2.0 miles west-northwest of Newark, Delaware and on property owned by Mr. J. H. Peters.

To reach the station from the post office in Newark, go west on Main Street for 0.4 mile to a triple fork at a railroad crossing. Take the middle one of three forks and go west on State Highway 273 for 1.9 miles to a crossroad. Turn left and go south on a blacktop road, down hill, for 0.1 mile to a side road on the left, east, side of the blacktop road. Turn left and go east on a gravelled road for 0.1 mile to an old fence line and a property line. Turn right and go south on a dirt track road, across a small meadow for about 171 feet to the station as described.

To reach the azimuth mark from the station: go north, across the small meadow, for about 171 feet to the gravelled road. Turn left and go west on the gravelled road for 0.1 mile to a north and south blacktop road. Turn left and go south on the blacktop road for 0.25 mile to a transformer powerline pole No. 9307 a farm driveway and the azimuth mark as described.

The station mark, a standard disk stamped PETERS 1961, is set in top of a square concrete monument projecting about 2 inches above the surface of the ground. It is 171.1 feet southwest of the approximate centerline of an east and west gravelled road, 62.5 feet northwest of the northwest corner of a house and about 2.0 feet west of an old north and south fence line and property line.

Reference mark 1, a standard disk stamped PETERS NO 1 1961, is set in top of a square concrete monument projecting about 2 inches above the surface of the ground. It is 137.0 feet southwest of the approximate centerline of a gravelled road, 44.0 feet northwest of the northwest corner of a house and about 2.0 feet west of the old fence line and property line.

Reference mark 2, a standard disk stamped PETERS NO 2 1961, is set in top of a square concrete monument projecting about 3 inches above the surface of the ground. It is 207.3 feet southwest of the approximate centerline of an east and west gravelled road, 93.5 feet west of the northwest corner of a house and about 2.0 feet west of an old north and south fence line and property line.

The azimuth mark, a standard disk stamped PETERS 1961, is set in top of a square concrete monument projecting about 4 inches above the surface of the ground. It is 28.5 feet north of an 8-inch cedar tree, 21.5 feet south of the centerline of a blacktop road, 14.0 feet east of the center of a farm driveway and 2.0 feet south of powerline pole NO. 9307.

Boundary Monument 85, is a 9 x 12 inch granite stone projecting about 25 inches above the surface of the ground, and at the northwest corner of a house. The stone has been pushed over and reset in the past and at the present time is leaning to the south.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PETERS

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12711

NO OBSERVATION CHECK ON THIS POSITION

DEODETIC LATITUDE	DEODETIC LONGITUDE	ELEVATION SCALED	61 METERS FEET
39 41 33.8986	75 47 20.9498		

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (from north)
DE	0700	395,174.62	616,724.90	- 0 14 16
MD	1900	1,140,766.59	679,458.54	+ 0 45 16

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin \Delta \theta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	DEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
AZIMUTH MARK	75 32 51.6	75 47 08	0700
AZIMUTH MARK	75 32 51.6	74 47 16	1900

POSITION DETERMINED BY TRAVERSE FROM STATION DREW CROW 1892



HORIZONTAL CONTROL DATA

JUL 1 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U.S. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

NAME OF STATION: PIERSON STATE: Maryland COUNTY: Carroll

CHIEF OF PARTY: R. W. Tomlinson		YEAR: 1961		Described by: Marvin W. Lorebee	
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.72 METERS		HEIGHT OF LIGHT ABOVE STATION MARK 2		METERS	
1a	Surface-station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
7a	Underground-station mark	BEARING	DISTANCE	DIRECTION	
			feet	meters	
	PIERSON AZIMUTH MARK				
11a	Reference Mark 1	SSW	17.02	5.188	00 00 00.0
11b	Reference Mark 2	N	16.52	5.035	37 46 52.6
11c	Boundary Monument	ESE	(2.142)	0.653	217 54 44.1
					274 30 16.9

The station is located about 6.0 miles east-northeast of Denton, Maryland, 1.8 miles north of the small settlement of Burdette, in a cultivated field and on property owned by Mr. Edgar Flanagan.

To reach the station from the general store in Burdette, go north from the General Store for 0.05 mile to a fork. Take the right fork and go north-northeast on a paved road for 0.25 mile to a side road on the right, east; turn right and go northeast on a blacktop road for 0.7 mile to a side road on the right hand side of the road. Continue north on the blacktop road for 0.5 mile to a field road on the left, west side of the blacktop road. Turn left and go west on the field road for 0.1 mile to the azimuth mark. Continue north on the blacktop road for 0.3 mile to a crossroad. Turn left and go west on a gravelled road for 0.4 mile to a farm driveway on the right, north, side of the gravelled road. Turn right and go north on the driveway for 0.2 mile to a track road fork, about 150.0 feet before reaching a farm house. Take the left fork and go north-northeast, passing to the west side of the house, for 0.1 mile, thence turn left and follow the field track road west through the field for 0.15 mile, thence turn right and go 0.1 mile to Boundary Monument No. 32 and the station.

The station mark, a standard disk stamped PIERSON 1961, is set in top of a 10-inch square concrete monument about 12 inches below the surface of the ground. It is 750.0 feet south of an east and west fence line, 240.0 feet east of the west side of a cultivated field, 210.0 feet southeast of the south end of a brushy fence row and 120.0 feet west of a 40-inch pine tree and 240.0 feet east of the timber line.

Reference mark 1, a standard disk stamped PIERSON NO 1 1961, is set in top of a 10-inch square concrete monument about 12 inches below the surface of the ground and about the same elevation as the station.

Reference mark 2, a standard disk stamped PIERSON NO 2 1961, is set in top of a 10-inch square concrete monument about 12 inches below the surface of the ground and about the same elevation as the ground.

The azimuth mark, a standard disk stamped PIERSON 1961, is set in top of a 10-inch square concrete monument about 8 inches below the surface of the ground. It is set in the centerline of a track field road which separates two fields, 0.15 mile west of the centerline of a north and south blacktop road, 3 feet south of a cultivated field and 3.0 feet north of the south edge of a cultivated field.

Boundary Monument No. 32, a 12-inch square limestone monument projecting about 24 inches above the surface of the ground. The monument was leaning to the south at about a 45 degree angle and was plumb on this date. A small cross was inscribed in its top and center for traverse and intersection purpose on this date. The monument is in good condition with the letter M cut in on the west side and the letter P on the east side.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PIERSON

STATE: MARYLAND YEAR: 1962

SECOND ORDER

SOURCE: C-12731

GEODETIC LATITUDE	38 55 26.5863	ELEVATION	18.0 meters
GEODETIC LONGITUDE	75 43 50.2841		59 feet

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	410,670.96	336,675.28
MD	1900	1,161,127.28	399,726.12

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  ON  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
PIERSON AZ MK		331 28 59.3	331 40 49	0700
PIERSON AZ MK		331 28 59.3	330 41 11	1900

Printed description

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PORTER STATE: Delaware COUNTY: Sussex

CHIEF OF PARTY: R. W. Tomlinson Year: 1962 Described by: R. L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
In Surface station mark. INSTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
WHITE 1934-			
11a Reference Mark 1	R	70.94	0 00 00.00
11a Reference Mark 3	S	153.01	95 25 15.2
11a Reference Mark 2	SSW	86.639	170 17 25.5
Denac. Boundary Monument	NW (74.196)	25.550	199 45 59.9
		22.615	350 54 06.7

The station is located in a heavy wooded area, 1.0 mile north of the small village of Gatesdown, 2.5 miles north-northeast of Sharptown and on property owned by Mr. H.F. Porter. To reach the station from Sharptown, go northwesterly on State Highway 315 for 0.8 mile to a side road right, turn right and go northeast on the macadam road for 1.35 miles to a crossroad in the small village of Gatesdown, turn right on a macadam road and go across the dam for 0.15 mile to a driveway left, just before reaching the residence of Mr. Porter on the left, turn left and go northerly on the field road for 0.15 mile to where the main road turns right, continue east on the field road between the cultivated fields and keep on the main woods road for 0.9 mile to a dim woods road right, turn right and go east-northeast on the dim woods road for about 500.0 feet to the station mark as described.

The station mark is a standard disk stamped PORTER 1962, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 4.5 feet west-southwest of a standard metal witness post and marker and 19.6 feet east of an 8-inch pine tree.

Reference mark 1 is a standard disk stamped PORTER NO 1 1962, set in top of a square concrete monument which is flush with the ground surface. It is 15.0 feet south of a 12-inch pine tree and 63.0 feet east of the witness post.  
Reference mark 2 is a standard disk stamped PORTER NO 2 1962, set in top of a square concrete monument which is flush with the ground surface. It is 25.0 feet east of a 12-inch pine tree and 87.0 feet south-southwest of the witness post.

Reference mark 3 is a standard disk stamped PORTER NO 3 1962, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 1.5 feet north of a standard metal witness post and marker, 4.0 feet north of a 14-inch pine tree and 12.0 feet east of the approximate center of the woods road.

Boundary Monument No. 8 is a 12 X 12 inch limestone monument marked with the letters H and P and projects about 26 inches above the ground surface. The monument has been broken off at the ground level and the top portion is sitting in place on the foundation. It is located 6.0 feet south of a 12-inch pine tree and 74.0 feet northwest of the witness post.

NAME OF STATION: PORTER

STATE: DELAWARE

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 34 32.8474	ELEVATION	7.5 METERS
GEODETIC LONGITUDE	75 42 10.5851		25 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	418,153.76	209,812.93
MD	1900	1,170,807.58	273,018.84

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $P \cos \Delta = 1$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
WHITE	175 37 29.4	175 48 12	0700
WHITE	175 37 29.4	174 48 39	1900

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PRISM STATE: Maryland COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961  
HEIGHT OF SURVEY STATION MARK 31.74 METERS, 1  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS  
WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTIONS
POSTER			
11a Reference mark 1	NE 93.17	28.398	0 00 00.0
11a Reference mark 2	SE 81.60	24.871	34 01 17
Intersection Stone (traverse)	SE 21.049	154.37	127 00 13
11a Reference mark 3	SSW 154.29	47.027	154 37 54.9

The station is located about 2.0 miles southwest of Newark, Delaware, 2.0 miles east-northeast of Elk Mills, Maryland and on property of the I.E. Dupont and Company, Incorporated Stine Laboratory, Administrative Manager of the Stine Laboratory has charge of the property.

To reach the station from the post office in Newark, Delaware: go west on Main Street for 0.4 mile to a triple fork at a railroad crossing. Take the left hand fork of three and go south-southwest on State Highway 2 (Elkton Road) for 2.05 miles to the second entrance of the Stine Laboratories on the right. Turn right and go north-east for 0.05 mile to a steel gate and guard building. Pass through the gate, register with guard, and continue straight ahead for about 200.0 feet to a T-street intersection. Turn right and go east-northeast on a blacktop street for 0.1 mile to a gate; pass through the gate onto a blacktop road. Turn left and go northwest on the blacktop road for 0.45 mile to a side road on the right. Just before reaching a gate of a fence enclosure around a set of buildings. Turn right and go east on a track road for 0.15 mile to a gate on the left. Turn left. Pass through a gate into an orchard and go north-west across the orchard to an opening and road through heavy timber. Continue northwest on the track road through the timber for 0.1 mile to the edge of timber at the edge of a cultivated field; go west, thence north along the east edge of timber for 0.1 mile to an east and west fence line and a track road on the left at the northeast corner of tall timber. Turn left and go west on the track road through the timber for 0.1 mile, thence southwest for 0.05 mile to the station and monument as described.

The station mark, a standard disk stamped PRISM 1961; is set in top of a square concrete monument which projects about 2 inches above the surface of the ground. It is 2.3 feet west-northeast of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped PRISM NO 1 1961, is set in top of a square concrete monument projecting about 6 inches above the surface of the ground. It is 93.9 feet northeast of a standard metal witness post and marker.

Reference mark 2, a standard disk stamped PRISM NO 2 1961; is set in top of a square concrete monument projecting about 6 inches above the surface of the ground. It is 83.7 feet southeast of a standard metal witness post and marker.

Reference mark 3, a standard disk stamped PRISM NO 3 1961; is set in top of a square concrete monument projecting about 4 inches above the surface of the ground. It is 155.4 feet south of a standard metal witness post and marker.

Boundary monument, intersection stone No. 2, is a triangular prism stone of granite set by Oniam in 1849. It projects about 40 inches above the surface of the ground with the letters H P and D on their respective sides, also the names of the commissioners and the date of survey on one side. The monument is in good condition, now located in dense woods and is protected by a pole enclosure. It is 69.8 feet south-southeast of a standard metal witness post and marker. A traverse connection was made from the monument to Triangulation Station PRISM, distance being 21.049 meters south-southeast of triangulation station Prism.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PRISM  
STATE: MARYLAND  
YEAR: 1961  
SECOND ORDER: A

SOURCE: G-12731

GEODETIC LATITUDE	39 40 13.6530	ELEVATION	38.3 METERS
GEODETIC LONGITUDE	75 47 20.5715		126 FEET
STATE & ZONE	CODE	X	Y
MD	1900	1,140,903.87	671,339.77
DE	0700	395,170.49	608,605.31
PA S	3702	2,552,015.60	128,938.29

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $P \cos \Delta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION ON OBJECT	GEODETIC AZIMUTH (From top)	PLANE AZIMUTH (From top)	CODE
FOSTER	180 17 28.4	179 31 52	1900
FOSTER	180 17 28.4	180 31 44	0700
FOSTER	180 17 28.4	179 01 08	3702



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY  
JUL 1977

NAME OF STATION: PULP STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 DESCRIBED BY: Marvin W. Larebee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 23.60 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 26 METERS.

15	78	OBJECT	BEARING	DISTANCE	DIRECTION
11a	11a	Desd. Boundary Monument	NE (219.156)	66.799	00 00 00.0
11a	11a	Reference Mark 1	ESE	78.241	39 54 48.3
11a	11a	Reference Mark 2	NW	73.89	108 38 08.3
11a	11a	Azimuth Mark	N	Approx. 0.4 mile	309 15 46.0
11a	11a				399 31 01.5

The station is located along the east side of a cultivated field, planted with small pine trees on this date, on property owned by the Gladfelter Pulpwood Company, Frederickburg, Virginia, about 5.5 miles east-southeast of Denton, Maryland, 2.0 miles south of the small settlement of Burrville and 2.0 miles north of the small settlement of Hickman.

To reach the station from the intersection of State Highway 317 and a blacktop road, the old highway, a crossroad in Burrville, Maryland, go south-southeast on the old highway for 0.15 mile to a side road right; continue southeast on a blacktop road for 1.05 miles to a crossroad. Turn right and go southeast on a gravelled road for 0.7 mile to a T-road intersection. Turn right and go north on a gravelled road for 0.15 mile to a gravelled driveway, a standard metal witness post at a fence corner and the azimuth mark on the left, west, side of the road. \*Continue west on the gravelled road for 0.15 mile to a side road on the right, north, and a small culvert across a small ditch on the left, south, side of the road. Turn left across the culvert and go south-southeast across the field for 0.1 mile to the northeast corner of a woods, continue south along the east side of timber for about 0.05 mile to a standard metal witness post and the station.

The station mark, a standard disk stamped PULP 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 4.5 feet east of a standard metal witness post and marker and at the east edge of a timber.

Reference mark 1, a standard disk stamped PULP NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 82.5 feet east-southeast of a standard metal witness post and marker and east at the east edge of a timber and about the same elevation as the station.

Reference mark 2, a standard disk stamped PULP NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 11.1 feet northwest of a standard metal witness post and marker and east at the east edge of a timber and about station elevation.

The azimuth mark, a standard disk stamped PULP 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 60.5 feet north of gravelled driveway, 16.0 feet west of the centerline of a north and south gravelled road, 1.5 feet east of a standard metal witness post and marker and 1.2 feet southeast of a fence corner.

Boundary Monument No. 28, a 12-inch square lime stone monument projecting about 30 inches above the surface of the ground, plumb and in general good condition, with the letter M cut in on its west side and P on the east side. A small cross was inscribed in the top and center for traverse purpose on this date. It is 219.0 feet northeast of the east edge of timber.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION PULP

STATE MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	17.6 METERS
38 51 55.6081	75 43 35.2887		58

STATE COORDINATES (Feet)			
STATE & ZONE	COORD	X	Y
DE	0700	411,783.62	315,326.74
MD	1900	1,162,609.98	378,401.25

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  OR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	OF ORIGIN AZIMUTH (from mark)		PLANE AZIMUTH (from mark)		CODE
	$\beta$	$\Delta$	$\beta$	$\Delta$	
AZIMUTH MARK	176 40 40.6	176 40 40.6	176 52 20	176 52 43	0700
	176 40 40.6	176 40 40.6	175 52 43	175 52 43	1900



JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PURPLE STATE: Delaware COUNTY: New Castle

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961

NOTE: HEIGHT OF TELESCOPE ABOVE BAILOR MARK 27.80 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 30.20 METERS.

OBJECT	BEARING	DISTANCE	DIRECTION
BETHEL R.M.	N 95.20°	28.406'	0 00 00.00
11a Reference Mark	RNE	Approx. 0.25 mile	12 44 53.2 ✓
16a Azimuth Mark	W	85.15	55 20 28.9
11a Reference Mark	W	25.55	283 35 41.8
Boundary Monument	W	234.10	283 22 14 *

\*Computed

The station is located in the south edge of a cultivated field, 2.0 miles east-south-east of Chesapeake City, 6.0 miles northwest of Middletown and on property owned by Mr. Ralph Gordy.

To reach the station from the post office in Chesapeake City, go easterly on a macadam road along the south edge of the canal for 0.5 mile to a T-road junction, turn right and go east on a concrete road for 1.45 miles to a cross road, continue east for 0.25 mile to the State line and a driveway right, to reach the azimuth mark continue east on the macadam road for 0.1 mile to the azimuth mark on the right, turn right and go south on the driveway to the end and then continue south-northeast across the cultivated field for 0.15 mile to a gap in the east and west fence line and the station as described.

The station mark is a standard disk stamped PURPLE 1961, set in top of a square concrete monument which is flush with the ground surface. It is 8.0 feet north of the east and west fence line and 13.2 feet northwest of a standard metal witness post and marker.

Reference mark 1 is a standard disk stamped PURPLE NO 1 1961, set in top of a square concrete monument which is flush with the ground surface. It is 101.0 feet north of the east and west fence line and 105.0 feet north-northeast of the witness post.

Reference mark 2 is a standard disk stamped PURPLE NO 2 1961, set in top of a square concrete monument which is flush with the ground surface. It is 5.0 feet north of the east and west fence line and 96.0 feet west of the witness post.

Azimuth mark is a standard disk stamped PURPLE 1961, set in top of a square concrete monument which projects 1 inch above the ground surface. It is 2.4' northwest of a standard metal witness post, 4.0 feet southwest of a powerline pole number 60, 17.0 feet south of the approximate center of the macadam road and about 5.0 feet north of the north edge of a cultivated field.

Boundary monument No. 73 is a 11"x11" limestone boulder which projects 30 inches above the ground surface and has the letter P on the east side and the letter M on the west side. The monument was recovered in good condition. The property owner stated that the monument has been moved a short distance. It is located in a east and west fence line, 51.0 feet east of a field entrance, 235.0 feet west of a field entrance and 244.0 feet west of a standard metal witness post.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: PURPLE  
RECOVERED BY: L. A. L.  
RECOVERY DATE: JUL 1977  
RECOVERY TIME: 10:00 AM  
RECOVERY PLACE: 2 miles southeast of Chesapeake City  
RECOVERY METHOD: BY ROAD  
RECOVERY NOTES: SEE RECOVERY NOTE, TRIANGULATION STATION

OBJECT	BEARING	DISTANCE	DIRECTION
11a Reference Mark	RNE	Approx. 0.25 mile	12 44 53.2 ✓
16a Azimuth Mark	W	85.15	55 20 28.9
11a Reference Mark	W	25.55	283 35 41.8
Boundary Monument	W	234.10	283 22 14 *

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PURPLE

STATE: DELAWARE YEAR: 1961

SOURCE: G-12731

GEODETIC LATITUDE	39 31 07.1164	ELEVATION	12.5 METERS
GEODETIC LONGITUDE	75 46 39.2887		61 FEET

STATE COORDINATES (1961)

STATE & ZONE	COORD	X	Y
DE	0700	398,176.70	553,292.52
HD	1900	1,144,872.46	616,086.49

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\sin \theta \cos \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From true)	PLANE AZIMUTH (From true)	COORD
AZIMUTH MARK	207 29 01.0	207 42 48	0700
AZIMUTH MARK	207 29 01.0	206 42 59	1900

The station surface disk was found destroyed. The sub-surface disk was recovered in good condition along with all other marks. The distance and direction to both reference marks and the azimuth mark was checked, then a new station surface monument set over the old sub-surface disk.

The complete new description follows:  
To reach the station from the post office in Chesapeake City, go east and north-east on State Highway 286 for 1.3 mile to a T-intersection. Turn right and go east on State Highway 286 for 1.3 mile to a crossroad. Continue east on the crossroad for 0.25 mile to a driveway right. Turn right and go south on the driveway to the end and then continue south-northeast across the cultivated field for 0.2 mile to the station in a fence line.

The station mark is a standard disk stamped PURPLE 1961 1976, set in the top of a 18-inch square concrete monument projecting 1-inch. It is 18 feet east of a field entrance, 235.0 feet west of a field entrance and 244.0 feet west of a standard metal witness post.

Reference mark one is a standard disk stamped PURPLE NO. 1 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 10 feet south of the north side of the wooded area in the field, and 1.2 feet southwest of a witness post. (NOTE 11a)

Reference mark two is a standard disk stamped PURPLE NO. 2 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 1.1 feet west of the witness post and 1 foot west of a witness post. (NOTE 11a)

The azimuth mark is a standard disk stamped PURPLE 1961 set in the top of a 10-inch square concrete monument projecting 1-inch. It is 18 feet south of the center of State Highway 286, 5 feet north of a powerline pole, and 2.5 feet west of a witness post. To reach the station from the post office in Chesapeake City, go east and north-east on State Highway 286 for 1.3 mile to a T-intersection. Turn right and go east on the crossroad for 0.25 mile to a driveway right. Turn right and go south on the driveway to the end and then continue south-northeast across the cultivated field for 0.2 mile to the station in a fence line.

The station surface disk was found destroyed. The sub-surface disk was recovered in good condition along with all other marks. The distance and direction to both reference marks and the azimuth mark was checked, then a new station surface monument set over the old sub-surface disk.

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: QUILLEN

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: C-12731

DEODETIC LATITUDE	DEODETIC LONGITUDE	ELEVATION	23.9 METERS 78 FEET
39 18 56.8500	75 45 44.1531		

STATE & ZONE	COMP	X	Y	$\theta$ (from $\Delta$ or angle $\theta$ )
DE	0700	402,214.62	479,388.62	- 0 13 08
MD	1900	1,150,194.80	542,264.83	+ 0 46 37

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OF  $\Delta$  OF FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
WHARTON	177 19 14.9	177 32 23	0700
WHARTON	177 19 14.9	176 32 38	1900

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: QUILLEN, STATE: Maryland, COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson, YEAR: 1961, Described by: M. W. Larabee-

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK: 30.68 METERS, HEIGHT OF LIGHT ABOVE STATION MARK: 33.20 METERS.  
1. SURFACE STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
WHARTON 1934			0 00 00.0
Boundary Monument 59 (traverse)	E	26.027	87 49 29.6
Reference Mark 1	SSW	84.94	196 27 42.7
Reference Mark 3	WSW	25.768	260 48 10.6
Reference Mark 2	WNW	227.82	320 12 37.7
	NW	69.440	
		88.89	
		27.099	

The station is located about 3.5 miles east of Hassey, Maryland, 1.5 miles southeast of Goll's, Maryland and on property owned by Mrs. Angeline Quillen.

To reach the station from the crossroads in the small village of Hassey, Maryland, go easterly on the macadam road for 2.55 mile to a gravelled road on the left, north side of the blacktop road. Turn left and go northerly on the gravelled road for 0.95 mile to a farm road on the right, east, side of the gravelled road and an old house in the southeast angle of the two roads. Turn right and go east on the farm road for 0.5 mile to farm buildings. Turn right, passing to the north side of farm house, to a board gate, pass through the gate, turn left and go north on a dim track road along the east side of a fence line for 0.3 mile to a board fence at fence corner. Pass through the gate and continue northeast on a track woods road for 0.1 mile to a dim track woods road on the right. Turn right and go east for about 0.05 mile to a standard metal witness post and marker and the station as described.

The station mark, a standard disk stamped QUILLEN 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 85.390 feet west of the Boundary Line and 5.2 feet south of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped QUILLEN NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 89.0 feet south of a standard metal witness post and marker and 3.0 feet west of an 18-inch oak tree and is about the same elevation as the station.

Reference mark 2, a standard disk stamped QUILLEN NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 87.0 feet northwest of a standard metal witness post and marker and is about the same elevation as the station.

Reference mark 3, a standard disk stamped QUILLEN NO 3 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 2.0 feet east of a standard metal witness post and marker and is about the same elevation as the station.

Boundary Monument 59 is a 12-inch square stone projecting about 12 inches above the surface of the ground with the letter Q on the west side and P on the east side.

HORIZONTAL CONTROL DATA

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: RELIANCE STATE: Delaware COUNTY: Sussex

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962 Described by: Marvin W. Larabee  
18 HEIGHT OF TELESCOPE ABOVE STATION MARK 1.53 METERS HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS  
7a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
RIGHT AZIMUTH MARK (geod. distance)		1658.882	00 00 00.0
Reference Mark 1	N	41.44	29 12 12.4
Reference Mark 2	S	25.50	205 42 47.3
Desc. Azimuth Mark (bench mark A65)	W	Approx. 0.4 mile	289 35 52.4

The station is located along the east road right-of-way of a north and south black-top road, in the village of Reliance, about 5.5 miles west of Sanford, Delaware, 5.5 miles southeast of Federalsburg, Maryland and about 0.1 mile south of the central section of Reliance.

To reach the station from the intersection of Main Street and Central Avenue in Federalsburg; go east on Central Avenue for 0.2 mile to a side street on the right, State Highway 313. Turn right and go south on State Highway 313 for 1.7 miles to where the highway turns sharp to the right; continue south-southeast on State Highway 577 for 3.65 miles to the small village of Reliance, a side road on the right hand side of the highway at the Maryland and Delaware State line. Turn right and go south on the State line road for 0.1 mile to a standard metal witness post and marker, powerline pole No. 148-16 and the station on the left, east, side of the blacktop road.

To reach the azimuth mark, Bench Mark A65, go north on the State line road for 0.1 mile to the junction of U.S. Highway 20 and State Highway 577. Turn left and go south-west on U. S. Highway 20 for 0.4 mile to a standard metal witness post and marker end mark on the right, north side of the highway.

The station mark, a standard disk stamped RELIANCE 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 43.1 feet south of powerline pole No. 148-16, 28.9 feet east of the centerline of a blacktop road, 5.8 feet north of a standard metal witness post and marker and 4.4 feet east of a cut bank.

Reference mark 1, a standard disk stamped RELIANCE NO 1 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 47.4 feet north of a standard metal witness post and marker, 31.6 feet east of the centerline of a blacktop road, 2.0 feet south of powerline pole No. 148-16 and about station elevation.

Reference mark 2, a standard disk stamped RELIANCE NO 2 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 28.3 feet east of the centerline of a blacktop road, 46.0 feet southeast of the centerline of the intersection of a driveway and the blacktop road, 19.7 feet south of a standard metal witness post and marker, 4.4 feet southeast of a road sign and station elevation.

The azimuth mark, a standard Coast and Geodetic Survey Bench Mark Disk stamped A65 1942, is set in top of a 6 inch square concrete monument projecting about 5 inches above the surface of the ground. It is 91.0 feet northwest of the centerline of the intersection of a driveway, 24.3 feet northeast of the centerline of U.S. Highway 20, 4.0 feet west of a standard metal witness post and marker, 1.0 foot southwest of a fence line and about 1.0 foot lower than the surface of the highway.

Boundary Monument No. 12 was not recovered. It is reported to be in the center of the blacktop road, about 2.0 feet under the road surface,

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION RELIANCE

STATE DELAWARE

YEAR 1962

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	38 38 02.9903	ELEVATION	13.5 SURFACE 4.4
GEODETIC LONGITUDE	75 42 27.3414		

STATE COORDINATES (FPM)

STATE & ZONE	CODE	X	Y	PL. CR. Δ. R. SURVEY
DE	0700	416,890.37	231,076.01	- 0 10 54
MD	1900	1,169,176.07	294,255.95	+ 0 48 40

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE PL. CR. Δ. R. FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZ MK BM A 65	80 23 42.0	80 34 36	0700
AZ MK BM A 65	80 23 42.0	79 35 02	1900

RECOVERY NOTE. TRIANGULATION STATION

NAME OF STATION: RELIANCE

ESTABLISHED BY: L.A.L.

YEAR: 1962

STATE: Delaware

COUNTY: Sussex

RECOVERED BY: C.L. Novak

YEAR: 1976

IN RELIANCE

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
DODD 1962 BOUNDARY MONUMENT '12	S	(1 mile) 439.59	133.987	0 00 00.00
RM 1	N	41.44	12.632	175 23 28.1
RM 2	S	25.50	7.774	182 55 47

The station and both reference marks were recovered and found in good condition as previously described. The azimuth mark was searched for but not found as previously reported. The distance and direction to all marks checked previous observations. The Maryland-Delaware Boundary Monument number 12 was reset at this date, see description thereof.



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NA TIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY  
JUL 1977

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: RIDER STATE: Delaware COUNTY: Sussex

CHIEF OF PARTY:	R. W. Tomlinson	Year:	1962	Described by:	R. L. Wright
HEIGHT OF TELESCOPE ABOVE STATION MARK	22.57 METERS	HEIGHT OF LIGHT ABOVE STATION MARK	25.06 METERS		
Surface station mark		DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
Underground station mark					
OBJECT	BEARING	DISTANCE	DIRECTION		
		feet	meters		
SHARP 1034		80.47	24.527	0 00	00.00
11a Reference Mark 2	NW	Approx. 0.25 mile		03 04	37.9
14a Azimuth Mark	NNE	71.00	21.640	48 07	30.7
11a Reference Mark 1	SSW	47.617	14.5199	265 45	50.5
De-ac boundary Monument	SW			262 15	15.5

The station is located on a small knole, 2.0 miles southeast of Sharptown, Maryland; 7.5 miles west-southwest of Laurel, Delaware and on property owned by Mr. H. J. Rider.

To reach the station from Sharptown, Maryland; go southeasterly on State Highway 346 for 1.7 miles to the Maryland-Delaware State Line; continue about 100.0 feet to a field road on the right, just east of a house, \* turn right and go south on the field road for 0.25 mile to the top of a narrow ridge and the Delaware-Maryland Boundary Monument the right and the station on the left as described.

The station mark is a standard disk stamped RIDER 1962, set in top of a square concrete monument which projects 5 inches above the ground surface. It is 4.2 feet west of a standard metal witness post and marker and 30.0 feet east of the approximate center of the field road.

Reference mark 1 is a standard disk stamped RIDER NO 1 1962, set in top of a square concrete monument which projects 5 inches above the ground surface. It is 11.0 feet west of the approximate center of the field road 76.6 feet southwest of the witness post. Reference mark 2 is a standard disk stamped RIDER NO 2 1962, set in top of a square concrete monument which projects 4 inches above the ground surface. It is 11.0 feet west of the approximate center of the field road and 83.6 feet northwest of the witness post.

Boundary Monument No. 4 is a 12 X 12 limestone monument marked with the letters H and F and projects about 25 inches above the ground surface. The monument leans slightly west but is considered in good condition. It is located 7.0 feet west of the approximate center of the field road and 49.5 feet southwest of the witness post.

\*Continue east on State Highway 346 for 0.05 mile to the azimuth mark on the left as described.

The azimuth mark is a standard disk stamped RIDER 1962, set in top of a square concrete monument which projects 1 inch above the ground surface. It is 1.7 feet east-south-east of a standard metal witness post and marker, 2.2 feet east-southeast of a powerline pole number 33, 15.6 feet east-southeast of a 12-inch sycamore tree, 30.3 feet south-southwest of the approximate centerline of State Highway 24 and 225.0 feet east of the farm road leading to the station.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION RIDER  
STATE DELAWARE  
YEAR 1962  
SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	38 31 04.9962	ELEVATION	12.9478
GEODETIC LONGITUDE	75 41 54.4162		42

STATE COORDINATES (feet)			
STATE ZONE	CONF	X	Y
DE	0700	419,373.57	188,782.12
MD	1900	1,172,391.43	252,013.07
			0 10 32
			4 0 49 01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $P = 100 \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT		GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
AZIMUTH MARK		191 49 52.4	192 00 24	0700
AZIMUTH MARK		191 49 52.4	191 00 52	1900





## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
NO. 1000  
Rev. Aug. 1964

NAME OF STATION: SANDTOWN. STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. A. Tomlinson. YEAR: 1961

Described by: Harvin A. Larabee

NOTES:	HEIGHT OF TELESCOPE ABOVE STATION MARK, 31.73 METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THIS STATION	HEIGHT OF LIGHT ABOVE STATION MARK 36 METERS
1a	Surface station mark		
7a	Underground station mark		
	OBJECT	BEARING	DIRECTION
		feet	
	WHITLEY 1934		
11a	Reference mark 1	NNE	00 00 00.0
11a	Reference mark 2	SE	105.52 32.164 211 31 52.5
16a	Azimuth mark	SE	80.41 27.252 304 06 53.7
	Disc 1 boundary monument	SSC	Approx. 0.2 mile 341 53 29.3
	Disc 1 boundary monument	SSC	(57.11) 17.407 304 18 20.1

The station is located about 3.5 miles east-southeast of Goldsboro, Maryland, 1.2 miles west-southwest of the small settlement of Sandtown, Delaware and on property owned by Mr. Charles Cohee.

To reach the station from the forks of roads in Goldsboro, Maryland, go north of State Highway 311 for 0.3 mile to a crossroad, the junction of State Highway 287 and State Highway 311. Turn right and go east on State Highway 287 for 2.25 miles to a side road on the right, south side of the highway. Just after passing a grocery store and Service Station on the left, turn right and go southeast on a gravelled road for 0.3 mile to a T-road intersection. Turn right and go south on a blacktop road for 0.05 mile to a side road on the left, east, side of the road. Turn left and go southeast on a blacktop road for 0.05 mile to a standard metal witness post, the Boundary Monument and the station as described.

To reach the azimuth mark from the station, continue southeast on the blacktop road for 0.2 mile to a drainage ditch, an east and west fence line, a standard metal witness post and the azimuth mark on the right, west, side of the road as described.

The station mark, a standard disk stamped SANDTOWN 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 39.0 feet south of the centerline of a blacktop road and 2.0 feet north-northeast of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped SANDTOWN NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 109.0 feet north-northwest of a standard metal witness post and marker, 35.5 feet north of the centerline of a blacktop road, 21.5 feet west of a 12-inch pine tree and is about the same elevation as the station.

Reference mark 2, a standard disk stamped SANDTOWN NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 91.0 feet north-northwest of a standard metal witness post and marker, 30.7 feet north of the centerline of a blacktop road, 19.0 feet east of a 10-inch pine tree and is about 12 inches higher than the station mark.

The azimuth mark, a standard disk stamped SANDTOWN 1961, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 51.0 feet south of the centerline of a blacktop road, 5.7 feet west of the west edge of a drainage ditch and 1.7 feet north of a standard metal witness post and marker.

Boundary monument No. 32, a 12-inch limestone monument projecting about 30 inches above the surface of the ground. The stone leans about 8 degrees to the south, with a deep pit in its south side, the upper edges badly broken, marked with the letter H on the west side and the letter P on the east side. It is 75.0 feet north of the south-east corner of woods, 62.6 feet east of a standard metal witness post and marker, and 26.5 feet south of the centerline of a blacktop road.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION SANDTOWN

STATE MARYLAND

YEAR 1961

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	39° 01' 32.9294	ELEVATION	16.5 METERS
GEODETIC LONGITUDE	75° 44' 19.6051		54 FEET

STATE COORDINATES (feet)

STATE & ZONE	CODE	N	E	# 100 Δ # 1000 E *
DE	0700	408,484.71	373,766.69	- 0 12 10
MD	1900	1,158,298.28	436,751.86	+ 0 47 30

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 100 Δ # 1 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	OPPOSITE AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK	338 17 10.9	338 29 21	0700
AZIMUTH MARK	338 17 10.9	337 29 41	1900

JUL 1977

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

By the  
National Ocean Survey  
NORTH AMERICAN 1973 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Form 528  
Rev. Aug. 1964

NAME OF STATION: SCHEPENS STATE: Delaware COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson. YEAR: 1961 Directed by: R. L. Wright -

NOTES	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION	HEIGHT OF LIGHT ABOVE STATION MARK	METERS	30
1a	Surface station mark,				
7a	Underground station mark				
	OBJECT	BEARING	DISTANCE	DIRECTION	
16a	MARYDEL RM 4	SSR	Approx. 0.35 mile	00 00 00.0	
11a	Azimuth Mark	S	97.90	111 09 35.8	
11a	Reference Mark 2	N	29.641	189 40 20.6	
Desc.	Boundary Monument No. 44 (Treverae)	N	8.0942	271 01 41.0	
11a	Reference Mark 1	N	28.576	348 54 36.7	

The station is located in the west edge of a cultivated field and in the east edge of a heavy wooded area, 1.0 mile south of Maryland, 2.0 miles northeast of Henderson and on property owned by Mr. Salvador Schepens.

To reach the station from the road south of the railroad station in Maryland, go southeasterly on the meadow road for 0.95 mile to a dim field road on the right, just before reaching a Y-fork. To reach the azimuth mark, continue south on the meadow road for about 200 feet to a Y-fork, continue south on a gravelled road for 0.1 mile to the azimuth mark on the right, south side of the road. Turn right and go west on the dim field road for 0.15 mile to a small cabin on the right, continue west and southwest around the northwest and west edge of the cultivated field for 0.25 mile to the west central edge of the field and the station as described.

The station mark is a standard disk stamped SCHEPENS 1961, set in the top of a square concrete monument which is about 18 inches below the surface of the ground. It is 17.9 feet east of a standard metal witness post and marker, 21.0 feet east of a group of 8-inch ash trees and 30.0 feet southeast of a triple trunk sycamore tree.

Reference mark 1 is a standard disk stamped SCHEPENS NO 1 1961, set in the top of a square concrete monument which projects about 2 inches above the surface of the ground. It is 3.0 feet east of the east edge of the woods, 95.0 feet north-northeast of a standard metal witness post and marker and 96.0 feet north-northeast of the group of ash trees.

Reference mark 2 is a standard disk stamped SCHEPENS NO 2 1961, set in the top of a square concrete monument which projects about 2 inches above the surface of the ground. It is 6.0 feet east of the east edge of the woods, 91.0 feet south of the group of ash trees and 92.9 feet south-southwest of a standard metal witness post and marker.

Azimuth mark is a standard disk stamped SCHEPENS 1961, set in the top of a square concrete monument which projects about 1-inch above the surface of the ground. It is 2.0 feet north-northeast of a powerline pole, 4.0 feet east-southeast of the east edge of a cultivated field, 2.1 feet north-northeast of a standard metal witness post and marker and 23.0 feet west-northwest of the approximate center of the gravelled road.

Boundary Monument No. 44 is a 12 x 12 inch limestone monument which projects about 30 inches above the surface of the ground and marked with the letters P and M. It is located in the east edge of the woods about 3.0 feet west of the east edge of the cultivated field. The monument is in a plumb position except for small chips on the corner and is in good condition.

## Part Two: North-South Boundary

265

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION SCHEPENS  
STATE DELAWARE YEAR 1961  
SOURCE G-12731  
SECOND ORDER

GEODETIC LATITUDE	39 05 56.2358	ELEVATION	17.6 METERS
GEODETIC LONGITUDE	75 44 39.9343		58 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	406,975.64	400,189.13
MD	1900	1,156,330.55	463,163.01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho$  FOR  $\Delta$   $\phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (from mark)	PLANE AZIMUTH (from mark)	CODE
AZIMUTH MARK		287 23 42.4	287 36 06	0700
		287 23 42.4	286 36 25	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NA-13NAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NA-13NAL GEODETIC SURVEY

NAME OF STATION: SCOUTS STATE: MARYLAND COUNTY: Cecil

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 Described by: M. W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.60 METERS, HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE STATION  
7a Underground station mark, DISTANCE

OBJECT	BEARING	DISTANCE	DIRECTION
HILLFORD 1935			
Boundary monument	ESE	43.22	0 00 00.0
Reference mark 2	S	90.50	35 59 24.9
11a Reference mark 3	S	27.585	107 53 24
11a Reference mark 3	NW	86.36	274 14 03.5
11a Reference mark 3	N	66.66	20 318 300 15 06

The station is located about 4.0 miles east of Fair Hill Maryland, 2.5 miles northwest of Newark, Delaware, on property owned by an Estate and leased to the Boy Scouts. At the present time a Mr. Paul S. Wiley has charge of the property.

To reach the station from the post office in Newark, Delaware, go west on Main Street for 0.4 mile to a triple fork at a railroad crossing. Cross the tracks and take the right hand fork of three and go northwest on State Highway 896 for 2.25 miles to a crossroad. Turn left and go west on a blacktop road for 0.45 mile to a gravelled road on the right, north, just after crossing a bridge, and a locked pole and pipe gate, key was obtained from Mr. Wiley at this date. Pass through the gate and go northwest, uphill, on a bladed road for 0.2 mile to a triangular blazed tree on the right, north, side of the road and the station as described.

The station mark, a standard disk stamped SCOUTS 1961, is set in top of a square concrete monument projecting about 3 inches above the surface of the ground. It is 126.0 feet north of a bladed road, the centerline, and 100.8 feet north of a 10-inch triangular blazed poplar tree.

Reference mark 1, a standard disk stamped SCOUTS NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 192.7 feet north of the centerline of the bladed road; 167.5 feet north of the 10-inch triangular blazed poplar tree and is about the same elevation as the station.

Reference mark 2, a standard disk stamped SCOUTS NO 2 1961, is set in the top of a square concrete monument projecting about 2 inches above the surface of the ground. It is 36.0 feet north of the centerline of a bladed road, 10.8 feet northwest of the 10-inch triangular blazed poplar tree, 7.0 feet south of the centerline of a dim track road and is about 12 inches higher than the station mark.

Reference mark 3, a standard disk stamped SCOUTS NO 3 1961, is set in the top of a square concrete monument projecting about 3 inches above the surface of the ground. It is about the same elevation as the station mark.

Boundary Monument 86, a granite stone about 12 inches square projecting about 12 inches above the surface of the ground. It is the Mason-Dixon State Line Monument with the letter M on the west side and letter P on the east side. A small cross was etched at the apex and center of the monument as a center point to measure to.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SCOUTS

STATE: MARYLAND YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39° 42' 26.2977	ELEVATION	79.3 meters
GEODETIC LONGITUDE	75° 47' 20.7103		260 feet

STATE & ZONE	CODE	X	Y	B OR Δ, ANGLE
DE	0700	395,215.35	622,026.77	- 0° 14' 17"
MD	1900	1,140,714.98	686,760.55	+ 0° 45' 36"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE B OR Δ, Δ, FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
HILLFORD	248° 42' 38.4"	248° 56' 55"	0700
HILLFORD	248° 42' 38.4"	247° 57' 02"	1900



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: SCHULTIE  
ESTABLISHED BY: L.A.J.  
YEAR: 1962  
STATE: Delaware  
BENCH MARK ALSO ☐  
RECOVERED BY: C.L. Novak  
YEAR: 1976  
COUNTY: Kent  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/2 miles north of Whitleysburg,  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION SCHULTIE  
STATE DELAWARE  
YEAR 1962

SECOND-ORDER

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
AZIMUTH MARK RM 3 BOUNDARY MONUMENT 37	S	(0.3 mile)	0	00:00:00
	SSW	80.88	24.650	28 39 05
	W	257.81	78.582	108 14 06.9

The station mark and the azimuth mark were recovered and found in good condition. Reference mark one and bench mark 26BPR were found destroyed. A new reference mark three was established at this date. The Maryland-Delaware Boundary Monument number 37 was reset at this date and may be used for a reference mark.

A complete new description follows.

The station is located 2 1/2 miles north of Whitleysburg, 3 3/4 miles southeast of Goldsboro, and 4 miles northeast of Greensboro. The station is on road right-of-way.

To reach from the intersection of State Highways 313, 314, and 404 in the east edge of Greensboro, go east on State Highway 314 for 100 feet to a side road left. Turn left and go northwest on a paved road for 1.0 mile to a side road left. Continue straight ahead and go east on road 110 for 3.15 miles to a crossroads and the station on the left. The station mark is a standard disk stamped SCHULTIE 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 58 feet east of a powerline pole numbered DEC 190 12-26, 42 feet north of the center of road 110, 32 feet east of the center of Holly Springs Road and 1.5 feet southeast of a witness post. (NOTE 1a7a)

Reference mark three is a standard disk stamped SCHULTIE 1961 NO. 3 set in the top of a 10-inch round concrete which is flush with the surface. It is 90 feet south of the witness post, 81 feet southeast of the powerline pole numbered DEC 190 12-26, 39 feet south of the center of road 110, and 24 feet east of the center of Holly Springs Road. (NOTE 11b)

The Maryland-Delaware Boundary Monument number 37 is a 12-inch square limestone monument with a "p" on the east side and an "m" on the west side which is carved in the stone. It has a 1-inch carved cross in the apex of the stone which marks the point intersected. It projects 24 inches above the surface. The sub-surface marker is a Maryland-Delaware Boundary Disk stamped N-S NO. 37 1976, set in an 8-inch mass of concrete which is 42 inches below the surface. They are 225 feet west of the center of Holly Springs Road, 201 feet west of the powerline pole and 3 feet east of a witness post.

The azimuth mark is a standard disk stamped SCHULTIE 1961, set in the top of a 10-inch square concrete which is flush with the top of the edge of the field and projecting 1 foot on the west side. It is 23 feet east of the center of Holly Springs Road, 5.8 feet west-southwest of a powerline pole numbered DEC 190 12-22, and 2.9 feet northeast of a witness post. (NOTE 16a)

To reach the azimuth mark from the station, go south on Holly Springs Road for 0.35 mile to the mark on the left.

The Maryland-Delaware Boundary Monument number 37 was set at this date. See description thereof.

SOURCE G-12731

GEODETIC LATITUDE	38 59 43.5160	ELEVATION	17.0 METERS
GEODETIC LONGITUDE	75 44 07.4337		56 FEET

STATE COORDINATES (NAD83)			
STATE & ZONE	CODE	X	Y
DE	0700	409,406.51	362,673.62
MD	1900	1,159,412.04	425,697.23

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \theta_0 + \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
SCHULTIE AZ MK	334 43 33.5	334 55 36	0700
SCHULTIE AZ MK	334 43 33.5	333 55 56	1900

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NAUTICAL CHARTING SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
NAUTICAL CHARTING SURVEY

NAME OF STATION: SHARPTOWN STATE: Delaware COUNTY: Sussex

## DESCRIPTION OF TRIANGULATION STATION

CHIEF OF PARTY: R. W. Tomlinson / YEAR: 1962 Described by: Harlyn W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.62 METERS / HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS

1a	Surface station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION
7a	Underground station mark	
	OBJECT	BEARING DISTANCE
		FEET MILES
		DIRECTION
11a	Reference Mark 1	S 35.575 00 00 00.0
11a	Sharptown, Municipal Water Tank	WNW Approx. 1.0 mile 08 27 26.1
11a	Reference Mark 2	NNW 34.520 10.520 118 05 01.5
11a	Desc. Boundary Monument 5 (traverse)	N 19.240 171 13 57.9
16a	Azimuth Mark	N Approx. 0.15 mile 176 00 18.2

The station is located about 1.0 mile east-southeast of Sharptown, Maryland, along the east side of a north and south track road along the Maryland and Delaware State Line and on property owned by Mr. Rider.

To reach the station from the junction of State Highway 313 and 308 in Sharptown, Maryland: go east-southeast on State Highway 308 for 1.7 miles to the Maryland-Delaware State Line and a track road on the left, north, side of the highway. Turn left and go north on a track road, between two cultivated fields for 0.75 mile to the Maryland and Delaware State Line Monument, a standard metal witness post and marker, two triangular blazed trees and the station on the right, east side of the road. Continue north on the track road along the west side of the timberline for 0.15 mile to where the track road enters the timber, a track road, a standard metal witness post and the azimuth mark on the left, west, side of the road.

The station mark, reference mark No. 1 and No. 2 and the azimuth mark are standard disk set in the tops of 10-inch square concrete monuments flush with the surface of the ground.

The station mark is stamped SHARPTOWN 1962. It is 35.0 feet north of a 10-inch triangular blazed maple tree, 23.0 feet south of a 1 1/2-inch triangular blazed twin trunked white oak tree, 14.0 feet east of the centerline of a north and south track road and 6.3 feet north of a standard metal witness post and marker.

Reference mark 1, stamped SHARPTOWN NO 1 1962, is 29.8 feet south-southwest of a standard metal witness post and marker, 7.4 feet east of the centerline of the north and south track road, 6.0 feet west-northwest of a 10-inch triangular blazed maple tree and about the same elevation as the station.

Reference mark 2 is stamped SHARPTOWN NO 2 1962. It is 41.0 feet north-northwest of a standard metal witness post and marker, 8.0 feet northwest of a 1 1/2-inch triangular blazed twin trunked white oak tree, 6.5 feet east of the centerline of a north and south track road and 6.0 feet west of a timberline and the same elevation as the station.

The azimuth mark is stamped SHARPTOWN 1962. It is 44.0 feet west-southwest of the southeast corner of a timberline, 36.0 feet west of the centerline of a north and south track road along the south west side of a timber, 8.0 feet north of the centerline of an east and west track road along the south side of a timber and north edge of a field and 1.3 feet south of a standard metal witness post and marker.

Boundary Monument No. 2, a 12 inch square granite stone projecting about 30 inches above the surface of the ground, with the foot of arms on the east and west sides and chipped on the east side near the top. The monument is plumb and in general good condition. A small cross was inscribed in its top and center for traverse purpose. It is 69.5 feet north of a standard metal witness post and marker, 42.0 feet north-northwest of a twin trunked triangular blazed white oak tree.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SHARPTOWN

STATE: DELAWARE

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 31	56.2178	ELEVATION	10,447.75
GEODETIC LONGITUDE	75 41	58.7564		34

## STATE COORDINATES (feet)

STATE & ZONE	CONC	X	Y	PLAN AZIMUTH (from north)	PLAN AZIMUTH (from station)
DE	0700	619,046.39	193,966.89	- 0 10 35	
MD	1900	1,171,972.55	257,189.18	+ 0 48 58	

\* PLAN AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION ON OBJECT	GEODETIC AZIMUTH (from north)	PLAN AZIMUTH (from north)	CODE
AZIMUTH MARK	172 11 41.2	172 22 16	0700
AZIMUTH MARK	172 11 41.2	171 22 43	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: SHARPTOWN

ESTABLISHED BY: L.A.L.

YEAR: 1974

STATE: Delaware

BENCH MARK ALSO ☐

RECOVERED BY: C.L. Novak

YEAR: 1976

COUNTY: Sussex

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile east of Sharptown

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET

HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE	FEET	WEIGHT	DIRECTION
SHARPTOWN, MONUMENT W.T.	NNW	(1 mile)	10.522	0 00 00.00	
RM 2	NNW	34.53	19.242	46 57 36	
BOUNDARY MONUMENT 5	N	63.13	19.2412	53 09 02.0	
RM 1	S	35.57	10.843	250 25 45	

The station and both reference marks were recovered and found in good condition as previously described. The azimuth mark was found destroyed. The monument had been pulled out of the ground and the disk was missing. The area around where the mark was located has been cleared and the area cultivated. There is no suitable place to set a new mark at this date. The Sharptown Municipal Water Tank is visible from the ground and may be used as an azimuth.

A difference of 3 minutes and 20 seconds in direction was noted to reference mark 1. All other distances and directions agreed with the 1961 observations.

The Maryland-Delaware Crown Stone number 5 was reset at this date, see description thereof.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SHOCKLEY, STATE: Maryland, COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson, YEAR: 1961, Directed by: Marvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.40 METERS, HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS, SURFACE STATION MARK, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
SANDTOWN			
11a Reference Mark 2	SW	33.63	00 00 00.0
11a Reference Mark 1	E	32.25	43 53 44.4
11a Boundary Monument 40 (transverse)	SE	9.828	271 59 38.2
11a Reference Mark 3	S	21.942	324 31 43.0
		41.338	356 29 14.4
		135.627	

The station is located in a dense woods area, on property owned by Mr. Frank Shockley who lives in Audubon, New Jersey, 15th South Logan Avenue. It is about 3.0 miles south-east of Henderson, Maryland, 2.5 miles east of Goldsboro, Maryland and about 1.0 mile northwest of the small settlement of Sandtown, Delaware.

To reach the station from the forks of roads in Goldsboro, Maryland: go north on State Highway 311 for 0.4 mile to a crossroad. Turn right and go east-northeast on State Highway 287 for 2.6 miles to the Maryland and Delaware State line; continue north-east on State Highway 287 for 0.75 mile to a gravelled road on the left, north, side of the highway. Turn left and go north and northwest on the gravelled road for 0.45 mile to where the gravelled road turns sharp right, a pile of rubbish and a dim track road through a dense timber. Continue west, passing through the rubbish pile, onto the dim track road through the timber and go 0.55 mile to a triangular blazed tree in the bend of the road, just before reaching its end and the station and Boundary Monument about 29.5 feet to the northeast.

The station mark, a standard disk stamped SHOCKLEY 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 29.5 feet northeast of a triangular blazed 4-inch oak tree and 3.8 feet south of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped SHOCKLEY NO 1 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 46.5 feet east-northeast of an 8-inch triangular blazed oak tree and 34.2 feet east-southeast of a standard metal witness post and marker.

Reference mark 2, a standard disk stamped SHOCKLEY NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 36.2 feet southwest of a standard metal witness post and marker and 18.0 feet north-northwest of an 8-inch oak tree.

Reference mark 3, a standard disk stamped SHOCKLEY NO 3 1961, is set in top of a 10-inch square concrete monument projecting about 2 inches above the surface of the ground. It is 107.5 feet south of an 8-inch triangular blazed oak tree, 7.5 feet west of the approximate centerline of a dim track timber road and 1.9 feet west of a standard metal witness post and marker.

Boundary Monument No. 40, a 12-inch square granite stone projecting about 30 inches above the surface of the ground. The monument is plumb and in good condition, with the letter H cut in its west side and the letter P in its east side. A small cross was inscribed in its top and center for traverse purpose on this date. It is 76.6 feet south-southeast of a standard metal witness post and marker and 40.5 feet east of the approximate centerline of the dim track woods road.

NAME OF STATION SHOCKLEY

STATE MARYLAND YEAR 1961

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	39 02 26.7884	ELEVATION:	14.1 meters
GEODETIC LONGITUDE	75 44 26.1148		66 feet

STATE COORDINATES (FATH)			
STATE & ZONE	CORR	N	E
DE	0700	408,147.46	378,994.41
MD	1900	1,157,870.02	441,992.87

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\alpha, \cos \Delta, \sin \Delta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (FROM SURF)		PLANE AZIMUTH* (FROM SURF)		CODE
	356 07 09.6	356 07 09.6	356 19 23	355 19 43	
SANDTOWN					0700
SANDTOWN					1900



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SHORT

STATE: MARYLAND

YEAR: 1962

YEAR: 1962

SECOND ORDER

CHIEF OF PARTY: R. Tomlinson  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 28.20 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30.78 METERS.  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTIONS
SULLYSTER			
Boundary Monument	NNE	(275.912)	0 00 0.0
Reference Mark	NE	84.098	28 28 18.6
1a	NE	25.750	50 44 33
16a	NE	84.468	52 28 37.2
11a	W	78.55	279 51 40

Station is located about 2.0 miles north of the small settlement of Whiteleysburg, and about 4.0 miles east-southeast of Greensboro Maryland. On the property owned by Mr. Hiram Short.

To reach the station from Greensboro Maryland, go east for 0.4 mile to three forks at the junctions of State Highways 313 and 314, keep the extreme left fork as per sign "Boyce Mill" and go northeasterly for 4.0 miles to a crossroad, turn right, go south-easterly for 0.65 mile to a farm road on the right, turn right for 0.15 mile to the residence of Mr. Short. Jog right around building and go southwest along the pasture fence for 0.35 mile to the station in the corner of pasture.

Station, a standard disk stamped SHORT 1961, set in the top of a 10 X 10 inch square concrete monument, it is 12 inches below the ground surface. It is 23.0 feet west of a standard metal witness post; 40.0 feet north of a fence corner.

Reference Mark No. 1, a standard disk stamped SHORT NO. 1 1961, set in the top of a 10 X 10 inch square concrete monument, projecting 2 inches from ground surface. It is 3.0 feet west of a fence line; 80.5 feet north-northeast of a standard metal witness post.

Reference Mark No. 2, a standard disk stamped SHORT NO. 2 1961, set in the top of a 10 X 10 inch square concrete monument, projecting 2 inches from ground surface. It is 102 feet west of a standard metal witness post; 8.0 feet south of a cultivated field; 100 feet southwest of a fence corner.

Azimuth Mark, a standard disk stamped SHORT 1961, set in the top of a 10 X 10 inch square concrete monument, projecting 4 inches from ground surface. It is 3.5 feet north of a standard metal witness post; 23.0 feet east of center of road; 2.5 feet east of powerline-pole number 1901230.

Boundary Monument No. 36, a 12 X 12 inch square monument, projecting 30 inches from ground surface. It is 25.0 feet north of center of field road; 30.0 feet north of a north-south fence line.

SOURCE: G-12731

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	1/4.8 METERS
38 58 53.2897	75 44 08.3948		49
STATE & ZONE	CODE	X	Y
DE	0700	409,312.83	357,592.46
MD	1900	1,159,406.54	420,615.47
			0 12 02
			+ 0 47 37

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta \alpha = \frac{1}{R} \left( \frac{1}{\sin \Delta} \right) \left( \frac{1}{\sin \Delta} \right)$

TO STATION OR OBJECT	DEFLECTED AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
AZIMUTH MARK	229 24 08.2	229 36 11	0700
AZIMUTH MARK	229 24 08.2	228 36 31	1900



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: STEWARD STATE: Maryland COUNTY: Queen Ann

CHIEF OF PARTY: R.W. TOMLINSON YEAR: 1962

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.60 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 30.30 METERS.  
1. SUFFICIENT MARK PLACEMENT AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
WHITELEY Azimuth Mark	SE	Approx 0.15 mile	0 00 0.00
Boundary Monument 33 (Trav.)	SW	386.538	126 31 59.0
Reference mark 2	SW	87.29	26 09 30.0
Reference mark 1	NNW	26.606	321 05 13
		66.15	326 18 27.3
		20.255	

Station is located about 1.2 miles south of the small settlement of Whiteleysburg, which is on the Maryland-Delaware state line and about 4.5 miles southeast of Greensboro Maryland. In the edge of the woods on the property owned by Mr. Wilson Steward. To reach the station from Greensboro Maryland, go east for 0.4 mile to three forks at the junctions of State Highways 313 and 314, keep the middle fork State Highway 314 and go southeasterly for 3.8 miles to a Y-fork in the road at the west edge of the small settlement of Whiteleysburg, take right fork and go 0.1 mile to a side road right go right, southeasterly for 1.0 mile to a side road left, turn left follow the road 0.9 mile to end of the road at the residence of Mr. Steward, here go to the left about 50 yards to end of a field, turn left, go northeast along end of field for about 0.3 mile to a very large oak tree on the left and station.

The station mark, a standard disk stamped STEWARD 1961, set in the top of a 10 X 10 inch square concrete monument, projecting about 2 inches from ground surface. It is 4.9 feet east-southeast of a standard metal witness post; 34.0 feet northwest of a cultivated field; 14.0 feet east of a 12 inch oak tree with a triangle blaze.

Reference mark 1, a standard disk stamped STEWARD NO 1 1961, set in the top of a 10X10 inch square concrete monument, projecting 4 inches from ground surface. It is 63.0 feet north of a standard metal witness post; 69.0 feet northeast of a 12 inch oak tree with triangle blaze.

Reference mark 2, a standard disk stamped STEWARD NO 2 1961, set in the top of a 10 X 10 inch square concrete monument, projecting about 4 inches from ground surface. It is 87.2 feet south-southwest of a standard metal witness post; 24.0 feet north-northwest of a cultivated field; 76.0 feet south of a 12 inch oak tree with triangle blaze.

Azimuth mark, a standard disk stamped STEWARD 1961, set in the top of a 10 X 10 inch square concrete monument, projecting 4 inches from ground surface. It is 1.2 feet west-northwest of a standard metal witness post; 3.8 feet east-southeast of a cultivated field; 4.6 feet south of a 4 inch pine tree.

Boundary Monument No. 33, a 12 inch square concrete monument, projecting about 30 inches from ground surface, it is slightly out of plumb. It is 130 feet south of the east-west tree line; about 500 feet west of north-south tree line, in a cultivated field.

## Part Two: North-South Boundary

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## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: STEWARD  
STATE: MARYLAND  
YEAR: 1962  
SECOND ORDER

SOURCE: G-12731

DEODETIC LATITUDE	38 56 21.0825	ELEVATION	18.4 METERS
DEODETIC LONGITUDE	75 43 56.7720		60

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (From north)
DE	0700	410,177.30	342,190.41	- 0 11 55
MD	1900	1,160,538.05	405,231.57	+ 0 47 44

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $B \cos \Delta$  OR FORMULA REFLECTING THE SECOND TERM

TO STATION OR OBJECT	DEODETIC AZIMUTH (From north)	PLANE AZIMUTH * (From north)	CODE
AZIMUTH MARK	305 00 51.9	305 12 46	0700
AZIMUTH MARK	305 00 51.9	304 13 08	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1973 DATUM

DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC  
ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL  
GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SYLVESTER

STATE: Maryland

COUNTY: Caroline

Described by: R. L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27 METERS HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
SANDTOWN				
11a Reference Mark 1	SE	79.45	24.216	0° 00' 00.00"
Desc. Boundary Monument	SSE	126.23	39.084	127° 29' 24.1"
16a Azimuth Mark	SSW	Approx. 0.5 mile		160° 44' 04.1"
11a Reference Mark 2	SW	68.795	20.968	201° 15' 53.7"
				232° 18' 06.3"

The station is located in the north edge of a cultivated field, 2.0 miles southwest of Sandtown, 3.0 miles southwest of Goldsboro, 4 1/2 miles northeast of Greensboro and on property owned by Mrs. Carl Sylvester.

To reach the station from the central section of Greensboro, go east on a macadam road for 0.4 mile to a three fork junction, keep the extreme left fork as per sign "BOYCE MILL" and go northeasterly on a macadam road for 4.0 miles to a crossroad, turn left and go north on a macadam road for 0.8 mile to private farm lane on the left, turn left and go 0.1 mile to a farm house, continue west through two gates and northwest on a farm lane for 0.15 mile to a gate at the corner of the woods and the azimuth mark is located on the left, continue north along the west edge of the field for 0.05 mile to the corner of the field, turn right and go east-northeast along the north edge of the field for 0.15 mile to the extreme corner of the field and the station on the left as described.

The station mark is a standard disk stamped SYLVESTER 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 5.1 feet southeast of a standard metal witness post and marker, 12.0 feet southwest of a 10-inch triangular blazed hickory tree and 24.0 feet northeast of the northeast edge of the cultivated field.

Reference mark 1 is a standard disk stamped SYLVESTER NO 1 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 8.0 feet northeast of the northeast edge of the cultivated field, 80.0 feet southeast of the 10-inch triangular blazed hickory tree and 84.2 feet southeast of the witness.

Reference mark 2 is a standard disk stamped SYLVESTER NO 2 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 8.0 feet northeast of a twin trunk poplar tree, 24.0 feet northwest of the northwest corner of the cultivated field, 68.4 feet southwest of the witness post and 80.4 feet southwest of the 10-inch triangular blazed hickory tree.

Azimuth mark is a standard disk stamped SYLVESTER 1961, set in top of a square concrete monument which is flush with the ground surface. It is 1.5 feet northwest of a northwest fence corner, 2.0 feet northeast of a standard metal witness post and marker and 8.0 feet southwest of the approximate center of the farm lane.

Boundary Monument No. 28 is a 12 X 12 inch limestone monument projecting 28 inches above the ground surface and marked with the letters M and P. The monument is in a good condition but is leaning slightly west. Point observed and traverse to was a small cross scribed on the apex of the monument. It is located 56.6 feet west-southwest of a 11-inch cedar tree and 132.0 feet south of the standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SYLVESTER

STATE: MARYLAND

YEAR: 1962

SECOND ORDER

SOURCE: C-12731

GEODETIC LATITUDE	39° 00' 41.2746	ELEVATION	18.5 METERS
GEODETIC LONGITUDE	75° 44' 15.8288		61 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	408,764.30	368,519.45
MD	1900	1,158,668.52	431,530.73

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \sin \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		PLANE AZIMUTH (From north)	CODE
	S	W	S	
AZIMUTH MARK	17 59	43.5	18 11	51
AZIMUTH MARK	17 59	43.5	17 12	11
				0700
				1900

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SZELESTEI, STATE: Delaware, COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson, YEAR: 1961, DESCRIBED BY: Richard L. Wright  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 27.43 METERS 1  
7a Surface-station mark DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
WALMSLEY			
11a Reference Mark 1	N	78.61	0 00 00.00
11a Reference Mark 2	E	313.04	03 45 18.7
11a Reference Mark 3	SE	185.80	83 22 35.8
Desc. Boundary Monument	WNW	180.80	138 32 17.1
		24.629	295 00 16.9

The station is located in dense woods and very swampy land, 2.0 miles west of Hartly, Delaware, 2 1/2 miles north-northeast of Templeville, Maryland and on property owned by Mr. Steve Szelestei.

To reach the station from the junction of State Highway 44 and 11 in Hartly, go northwest on State Highway 44 for 1.55 miles to a crossroad, turn left, go southwest on the main traveled road for 1.15 miles to a T-road junction, turn right for about 150 feet and then turn left across a cultivated field for about 150 feet to the east edge of the woods and a dim woods road, continue west on the woods road for 0.1 mile to the station as described.

The station mark is a standard disk stamped SZELESTEI 1961, set in top of a square concrete monument which projects about 2 inches above the ground surface. It is 8.1 feet south-southeast of a standard metal witness post and marker, 20.0 feet west-southwest of a four trunked oak tree and 45.0 feet east-southeast of a 12-inch triangular blazed maple tree.

Reference mark 1 is a standard disk stamped SZELESTEI NO 1 1961, set in top of a square concrete monument which projects 4 inches above the ground surface. It is 71.6 feet north-northeast of the witness post and 72.6 feet north-northeast of the four trunked oak tree.

Reference mark 2 is a standard disk stamped SZELESTEI NO 2 1961, set in top of a square concrete monument which projects 3 inches above the ground surface. It is 78.0 feet south-southeast of the four trunked oak tree and 93.2 feet southeast of the witness post.

Reference mark 3 is a standard disk stamped SZELESTEI NO 3 1961, set in top of a square concrete monument which projects 2 inches above the ground surface. It is 2.5 feet west of the witness post and 55.0 feet south of the approximate center of the woods road.

Boundary Monument No. 49 was recovered broken or eroded off with the top portion lying in a prone position. The remaining base is badly eroded. The top is in excellent condition. The point measured to and observed to was a cross mark scribed in the foundation of the monument. The foundation is located 35.0 feet west-northwest of a 12-inch triangular blazed maple tree and 74.6 feet west of a standard metal witness and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION SZELESTEI

STATE DELAWARE YEAR 1961

SECOND ORDER

SOURCE G-12731

GEODETIC LATITUDE	39 10 14.4693	ELEVATION	21.6 METERS
GEODETIC LONGITUDE	75 45 00.1625		71 FEET

STATE COORDINATES (FZU)			
STATE & ZONE	CURVE	X	Y
DE	0700	405,477.56	426,523.63
MD	1900	1,154,375.53	489,466.35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \text{CH} \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION ON OBJECT		GLIDEOTIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
WALMSLEY		174 57 59.4	175 10 37	0700
		174 57 59.4	174 10 55	1900

## HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TANGENT = BOUNDARY MON 82 STATE: Maryland - Delaware COUNTY: Cecil - New Castle

CHIEF OF PARTY: J.C. Ellis Described by: H.C.H.

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	1 METERS	HEIGHT OF LIGHT ABOVE STATION MARK	1 METERS
DESC.	SURFACE-STATION MARK	1	DESCRIPTORS	1
	UNDERGROUND-STATION MARK	1	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
OBJECT	BEARING	FEET	DISTANCE	DIRECTION
11a	SSS	199.40	60.777	000 00 00.0
11a	SSS	199.91	59.713	223 34 42
				273 31 37

Station is located about 4 miles southwest of Newark, about 2½ miles northeast of Elkton, about 2 miles southeast of Elk Mills, and ½ mile northeast of Iron Hill railroad depot. It is 2½ feet northwest of most westerly rail of the Pennsylvania railroad tracks, 178½ feet northwest of fenceline, and beside old tangent stone of Mason-Bixon. The mark is 18 by 11 inches, projects 28 inches the letters M and D are very legible, also the word TANGENT and the date 1901. Point intersected was apex of the larger granite stone, reference mark No. 1 is 1 foot southeast of fenceline, 13½ feet northwest of center-line of track road, 62½ feet northwest of the most westerly rail of railroad tracks of the Pennsylvania railroad, and 43½ feet east of the south end of a culvert. The mark is a standard reference mark disk set in a 10 by 10 inch concrete monument, projects 2 inches and the disk is stamped TANGENT NO 1 1958.

Reference mark No. 2 is 1 foot southeast of fenceline, 12 feet northwest of center-line of track road, 62½ feet northwest of the most westerly rail of the Pennsylvania railroad tracks. The mark is a standard reference mark disk set in a 10 by 10 inch concrete monument, flush with the ground and the disk is stamped TANGENT NO 2 1958.

To reach from the post office in Elkton, go east on State Highway No. 7 for 0.1 mile, turn left and go north and northeast on State Highway No. 279 for 2.25 miles to forks, keep right fork (State Highway No. 279) for 2 miles to side road right, turn right on narrow gravel road and go southeasterly for 0.3 mile to a side road left leading to railroad station, turn left and go northerly for 0.25 mile to station on left as described.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TANGENT

ESTABLISHED BY: J.C.E.

RECOVERED BY: R.W. Tomlinson Year: 1958 State: Maryland-Delaware

Year: 1961 County: Cecil-New Castle

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts. The station mark, reference marks 1 and 2 were recovered as described and in good condition. The description are adequate.

OBJECT	NOTE	BEARINGS	1961 DISTANCE	1961 DIRECTIONS
11a POINT			feet	0 00 00.00
11a	SSS	199.40	60.774	46 20 08.25
R.M. NO. 1	SSS	199.91	59.712	155 38 39.3
R.M. NO. 2	SSS			205 53 53.4

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MON 82 TANGENT STONE

STATE: DELAWARE - MARYLAND YEAR: 1958

SECOND ORDER

SOURCES: G-12731

GEODETIC LATITUDE	39° 38' 56.3612	ELEVATION	36.08 METERS
GEODETIC LONGITUDE	75° 47' 20.2050	NO CHECK	118.4 FEET

STATE COORDINATES (feet)									
STATE & ZONE	CODE	A	B	C	D	E	F	G	H
MD	1900	1,141,036.01							
DE	0700	395,166.81							

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\rho \sin \Delta$  OR  $\rho \cos \Delta$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
PENN	58 46 18.6	58 00 42	1900
PENN	58 46 18.6	59 00 34	0700

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TANGENT

ESTABLISHED BY: J.C.E.

RECOVERED BY: C.L. Novak

Year: 1958 State: Md.-Del.

Year: 1977 County: Cecil-New Castle

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles southwest of Newark, Delaware

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts

The station and all marks were recovered and found in good condition

as previously described.

R

R



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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN INITIATIVE

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Form 0-5a  
Rev. Aug 1966

NAME OF STATION: TANYARD STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1962  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 1.58 METERS  
HEIGHT OF LIGHT ABOVE STATION MARK: 1.27 - METERS  
DISTANCES AND DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
ATLANTA AZIMUTH MARK				
Tanyard Reference Mark	NW	(404.684)	123.296	0 00 0.0
Boundary Monument 16 (Trav.)	ENE	(111.545)	33.999	319 58 12.91
Reference Mark 1	E	34.44	10.495	74 28 49.6
Reference Mark 2	W	30.51	9.300	100 41 06.0
				279 43 42.1

Station is located about 3.5 miles east of Federalburg Maryland, 6.5 miles southwest of Bridgeville Delaware. In edge of woods and on the southerly side of a cultivated field. On the property owned by Mr. Ronald Johnson.

To reach the station from the intersection of Main Street and Central Ave. in Federalburg Maryland, go easterly on State Highway 318 for 0.35 mile to the junction of State Highways 318 and 306, keep the right fork and continue easterly on State Highway 318 for 2.8 miles to a church on the left and side road on the right, turn right, go southerly on the macadam road for 0.75 mile to corner of a field and woods across the road from a brick house, here turn right go easterly across the field along the north edge of the woods for 0.3 mile to the station.

Station Mark, a standard disk stamped TANYARD 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 3.5 feet northeast of a standard metal witness post; 2.0 feet south of a cultivated field.

Reference Mark No. 1, a standard disk stamped TANYARD NO. 1 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 37.0 feet east of a standard metal witness post; 3.0 feet south of a cultivated field.

Reference Mark No. 2, a standard disk stamped TANYARD NO. 2 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 28.0 feet west of a standard metal witness post; 3.0 feet south of a cultivated field.

Reference Mark No. 3, a standard disk stamped TANYARD NO. 3 1962, set in the top of a 10 X 10 inch square concrete monument, that is 18 inches below the ground surface. It is 300 feet north of a east-west woods line, in a cultivated field.

Boundary Monument No. 16, a 10 X 10 inch square monument, projecting 25 inches from ground surface. It is 50.5 feet north of a east-west woods line; 115 feet northeast of a standard metal witness post.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TANYARD

STATE: MARYLAND YEAR: 1962

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	38 41 30.3363	ELEVATION	13.8 METERS
GEODETIC LONGITUDE	75 42 45.3452		45 FEET

### STATE COORDINATES (FATH)

STATE & ZONE	CODE	X	Y	$\theta$ (in $\Delta$ + INCHES)
DE	0700	415,529.40	252,036.74	- 0 11 06
MD	1900	1,167,451.82	315,208.97	+ 0 48 29

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  (in  $\Delta$  + INCHES) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
ATLANTA AZ MK	171 34 19.3	171 45 25	0700
ATLANTA AZ MK	171 34 19.3	170 45 50	1900

## HORIZONTAL CONTROL DATA

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U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY  
JUL 1977

NAME OF STATION: TAPAILA. STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R.W. Tomlinson. YEAR: 1961. Described by: V.D. Novak.

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK	YEAR: 1961	HEIGHT OF LIGHT ABOVE STATION MARK	34. METERS.
1a. Surface station mark	31			
7b. Underground station mark				
	OBJECT	BEARING	DISTANCE	DIRECTION
	MARYDEL RM 4			
11e. R.M. 1	NE	37.56	11.447	00 06 00.0
11e. R.M. 3	ESE	368.310	112.259	39 21 38.9
11e. R.V. 2	SE	41.57	12.671	108 46 42.1
				157 04 10.5

The station is located about 1.0 mile north of Maryland, 1.0 mile south-east of Templeville, Maryland and on property owned by Mr. Matthew R. Tarsilla. Highway 302 for 1.1 miles to the Delaware-Maryland State line, continue 0.25 mile to a gravelled road right, turn right and go southeasterly on gravelled road for 0.95 mile to a farm road right, turn right and go 0.05 mile to a house, continue on field road for 0.3 mile to some old building on the right, turn left and go southeasterly across field for 0.15 mile to the north end of Y-shaped area of timber extending north, continue easterly for 0.05 mile to the east end of the trees, follow track road through timber for 0.2 mile to the station.

Station, is a standard disk set in the top of a concrete monument which projects about 2 inches above the surface of the ground, stamped "TARAILA 1961". It is 28.1 feet west-northwest of a 8-inch triangular blazed pine tree and 1.9 feet east of a standard metal witness post and marker.

Reference mark 1, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 3 inches above the surface of the ground, stamped "TARAILA NO 1 1961". It is 42.4 feet northeast of a 8-inch triangular blazed pine tree and 1.5 feet southwest of a standard metal witness post and marker.

Reference mark 2, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 3 inches above the surface of the ground, stamped "TARAILA NO 2 1961". It is 26.8 feet north-northeast of a 8-inch triangular blazed pine tree and 1.3 feet southwest of a standard metal witness post and marker.

Reference mark 3, is a standard disk set in the top of a 10 x 10 inch concrete monument which projects about 2 inches above the surface of the ground, stamped "TARAILA NO 3 1961". It is 14.0 feet west-northwest of the west edge of bank and 1.4 feet southwest of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TARAILA

STATE: MARYLAND

YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 07 37.9763	ELEVATION	20.0 METERS
GEODETIC LONGITUDE	75 44 48.8329		66 FEET

## STATE COORDINATES (Meters)

STATE & ZONE	CODE	X	Y	$\beta$ (in $\Delta$ at angle)
DE	0700	406,312.25	410,687.40	- 0 12 30
MD	1900	1,155,485.03	473,647.70	+ 0 47 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  (in  $\Delta$  at angle) FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
MARYDEL RM 4	176 20 53.3	176 33 23	0700
MARYDEL RM 4	176 20 53.3	175 33 42	1900
TARAILA RM 3	285 07 36.9	285 20 07	0700
TARAILA RM 3	285 07 36.9	284 20 25	1900

## RECOVERY NOTE. TRIANGULATION STATION

NAME OF STATION: TARAILA

ESTABLISHED BY: L.A.B.

YEAR: 1961

STATE: Md.-Del.

BENCH MARK ALSO ☐

RECOVERED BY: C.L. Novak

YEAR: 1976

COUNTY:

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1 mile north of Maryland

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		DISTANCE		DIRECTION	
OBJECT	BEARING	FEET	METERS		
RM 3 (AZ MK) (VC)	ESE	368.3		0 00 00.00	
RM 2	SE	41.57	12.670	48 16 46	
RM 1	NE	37.56	11.449	290 35 15	
BOUNDARY MONUMENT '46	E	(20.88)	6.3656	341 18 33.4	
Unable to measure between RM's					

The station and all marks were recovered and found in good condition as described. The distances and directions to all marks were within close agreement with the previous observations. The old Maryland-Delaware Boundary Monument number 46 set at this date, see description thereof.

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
U. S. NATIONAL GEODETIC SURVEY  
JUL 1977

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TOWN STATE: Maryland COUNTY: Caroline

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961 Described by Marvin W. Lerebee  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.50 METERS HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS  
1a Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE CHUING AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		feet	meters	
TARAILA				
11a Reference mark 1	NE	82.03	25.001	00 00 00.00
Desc. Boundary Monument	SE	(91.224)	27.805	33 09 23.9
11b Reference mark 2	NW	37.42	11.405	123 50 16.6
Desc. Azimuth Mark	NNW	Approx. 0.25 mile		299 47 07.9
16b				320 02 53.12

The station is located in the town of Maryland, about 100 yards east-northeast of the Railroad Station and on State owned property. It is 61.0 feet east-southeast of the centerline of the intersection of State Highway 454 and across the street, 30.6 feet north-northeast of the centerline of State Highway 454 and 3.5 feet east-southeast of a north-northeast witness post and marker.

A new to reach the station is necessary.

To reach the azimuth mark from the station, go west on State Highway 454 for 0.25 mile to a standard metal witness post and marker, a metal 24-inch culvert under State Highway 454 and the azimuth mark as described.

The station mark, a standard disk stamped TOWN 1961, is set in the top of a 10-inch square concrete monument flush with the surface of the ground.

Reference mark 1, a standard disk stamped TOWN NO 1 1961, is set in the top of a 10-inch square concrete monument flush with the surface of the ground. It is 82.1 feet northeast of a standard metal witness post and marker, 42.2 feet east of the northwest fence corner, 42.6 feet south of the southwest side of a house, 16.2 feet east of a powerline pole, 14.5 feet south of a fence line and about the same elevation as the station.

Reference mark 2, a standard disk stamped TOWN NO 2 1961, is set in a drill hole in the top of a 10-foot long and 8-inch wide concrete headwell of a 24-inch round concrete culvert under State Highway 454. It is about 1.0 foot above the station, 34.0 feet west-northwest of a standard metal witness post and marker and 32.0 feet northeast of the center of the intersection of State Highway 454 and across the street.

The azimuth mark, a standard disk stamped TOWN 1961, is set in the top of a 12-inch concrete cylinder flush with the surface of the ground. It is 25.4 feet northeast of the centerline of State Highway 454 and 11.0 feet south-southeast of the center of a 24-inch metal culvert under State Highway 454 and 9.2 feet south-southeast of a standard metal witness post and marker.

Boundary Monument No. 45 is a 12-inch square limestone monument projecting about 30 inches above the surface of the ground. It has the Coat of Arms on the east and west sides. The monument is upright and in good condition. It is 92.6 feet east-southeast of a standard metal witness post and marker.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION TOWN YEAR 1961 SECOND ORDER  
STATE MARYLAND

SOURCE G-12731

GEODETIC LATITUDE	39 06 45.2572	ELEVATION:	22.0 METERS
GEODETIC LONGITUDE	75 44 45.2516		72 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\beta$ (ON $\Delta$ $\beta$ ANGLE)
DE	0700	406,575.14	405,352.62	- 0 12 28
MD	1900	1,155,840.49	468,318.53	+ 0 47 14

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  (ON  $\Delta$   $\beta$ ) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)		PLANE AZIMUTH (From mark)		CODE
	137 01 11.0	137 13 39	137 01 11.0	137 13 39	
TOWN AZ MK					0700
TOWN AZ MK	137 01 11.0	136 13 57			1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TOWN R.L.T. YEAR: 1961 STATE: Maryland BENCH MARK ALSO ☐  
ESTABLISHED BY: J.O. Bull YEAR: 1968 COUNTY: Caroline  
RECOVERED BY: J.O. Bull  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: at Maryland  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Azimuth Mark	NW	approx. 0.25 mi.	0.25 mi.	00 00 00"
Reference Mark	NE	82.02	25.000	73 06 21
Boundary Monument	E	71.67	21.8460	140 26 32.4
POINT B	SE	85.21	25.9727	163 45 11.4
Reference Mark	NW	37.42	11.406	339 44 19

Station was recovered as described and all marks were found to be in good condition. The distance and direction to the reference marks was checked and found to be correct.

The station was occupied at this time for the purpose of relocating Delaware-Maryland Boundary Monument number 45. The local civic club requested that the boundary monument, which had been replaced, should be placed on the state line and also further away from the highway to insure preserving mark. A difference was found in the distance and direction to monument.



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY  
JUL 1977

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TOWNSEND STATE: MARYLAND COUNTY: Cecil

CHIEF OF PARTY: R.W. Tomlinson YEAR: 1961 Described by: V.D. Novak

NOTE:	HEIGHT OF TELESCOPE ABOVE STATION MARK		HEIGHT OF LIGHT ABOVE STATION MARK		METERS	
	Surface station mark	Underground station mark	Distances and directions to azimuth mark, reference marks and prominent objects which can be seen from the ground at the station	Bearing	Distance	Direction
7a.						
16b.	COLDWELL					
11b	1	1	553.914	N	180	53 20.34
11b	2	2	50.57	NE	225	52 35.2
			48.65	SE	315	58 40.2

The station is located about 4.0 miles west of Townsend, Delaware, 2.0 miles north-east of Seeseffes Maryland. On property owned by Mr. H.B. Carter who gave permission. To reach the station from the Rehoboth Church in the small village of Seeseffes Maryland, go easterly on the main road for 2.15 miles to a side road left about 50 yards before reaching a cross road, turn sharp left and go northerly on State Line Road for 1.45 miles to the station on the left.

The station, is a standard disk set in the top of a 10 x 10 inch concrete monument which is about 14 inches below the surface of the ground, stamped "TOWNSEND 1961". It is 45.8 feet southwest of a 24-inch triangular blazed poplar tree, 32.5 feet west of a standard metal witness post and marker and 16.8 feet west of the approximate center of a asphalt road.

Reference mark 1, is a standard disk set in the top of a concrete cylinder which is flush with the surface of the ground, stamped "TOWNSEND NO 1 1961". It is 33.0 feet north of a standard metal witness post and marker, 20.0 feet east of the approximate center of a asphalt road and 7.0 feet north of a 24-inch triangular blazed poplar tree.

Reference mark 2, is a standard disk set in the top of concrete cylinder which is flush with the surface of the ground, stamped "TOWNSEND NO 2 1961". It is 62.5 feet south of a 24-inch triangular blazed poplar tree, 37.6 feet south of a standard metal witness post and marker and 16.7 feet east of the approximate center of a asphalt road.

The azimuth mark, is a standard disk set in the top of a concrete cylinder which is flush with the surface of the ground, stamped "TOWNSEND 1961". It is 74.0 feet east of a fence corner, 56.0 feet north-northeast of the approximate center of a T-intersection and 3.0 feet south of a fence line.

Note: The azimuth mark was observed and a Geodimeter Traverse was made to station COLDWELL 1651.355 meters, TOWNSEND Azimuth Mark is 553.914 meters.

BOUNDARY MONUMENT NO. 64 was searched for but not found.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TOWNSEND  
STATE: MARYLAND  
YEAR: 1961  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION	HEIGHT
39 23 18.0894	75 46 04.1730	505,826.13	18.6 METERS
		568,672.34	61 FEET

STATE COORDINATES (FEET)			
STATE & ZONE	CODE	A	Y
DE	0700	400,751.70	505,826.13
MD	1900	1,148,272.59	568,672.34

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \sin^{-1} \Delta$  FORMULA, NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (From local)	PLANE AZIMUTH (From local)	CODE
TOWNSEND AZ MK		177 22 19.4	177 35 42	0700
TOWNSEND AZ MK		177 22 19.4	176 35 55	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TOWNSEND  
ESTABLISHED BY: L.A.L.  
RECOVERED BY: C.L. Novak  
YEAR: 1961  
STATE: MARYLAND  
COUNTY: Cecil  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 miles west of Townsend  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		BEARING		DISTANCE		DIRECTION	
OBJECT		BEARING		DISTANCE		DIRECTION	
RM 1		NE	50.58	15.418	0	00	00:00
RM 2		SE	48.65	14.824	90	07	30
BOUNDARY MONUMENT 64		S	(699.36)	213.164	134	34	38.4

The station and both reference marks were recovered and found in good condition as previously described. The azimuth mark was destroyed as previously reported. No new azimuth mark was established at this date. The Maryland-Delaware Boundary Monument numbered 64 was set at this date, see description thereof.



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TWILLEY STATE: Maryland COUNTY: Wicomico

CHIEF OF PARTY: R. W. Tomlinson. YEAR: 1962		Described by: Marvin W. Larabee	
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 23.33 - METERS		HEIGHT OF LIGHT ABOVE STATION MARK 25.93 - METERS	
1a	Surface station mark,	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	Underground station mark		
7a		BEARING	DIRECTION
		feet	minutes
MD. DEL. CORNER RM 4 -		76.59 -	23.345 -
11a Reference Mark 2		199.150 -	60.700 -
11a Reference Mark 3		80.43	24.514 -
11a Reference Mark 1		(25.348)	7.725 -
Desc. Boundary Monument 1 (traverse)			301 22 24.2

The station is located about 7.0 miles west of Delmar, Delaware, 5.0 miles south-south-east of Sharptown, Maryland, 3.5 miles east-northeast of Hardeela Springs, Maryland, in dense woods land. The property on the Maryland side is owned by Mrs. May Twilley who lives at the first house west of the station and the land on the Delaware side is owned by Mr. Lee Wright.

To reach the station from the Railroad Crossing, just south of the Railroad Station in Delmar, Delaware; go east on State Highway 455 for 0.2 mile to a Y-fork. Take the right hand fork and continue west-northwest on State Highway 455 for 5.0 miles to a Y-fork. Take the right hand fork and go north-northwest on a blacktop road for 1.15 miles to a crossroad. Turn left and go west-southwest on a blacktop road for 1.15 miles to the end of the blacktop road at the State Line and a dim track woods road on the left hand side of the blacktop road. Turn left and go south-southeast on the dim track woods road for 0.15 mile to a standard metal witness post and marker and the station, Boundary Monument No. 1.

The station mark, a standard disk stamped TWILLEY 1962, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 19.6 feet east-southeast of a 14-inch pine tree, 19.0 feet north-northwest of a 12-inch oak tree and 4.1 feet east-northeast of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped TWILLEY NO 1 1962, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 84.0 feet northeast of a 14-inch pine tree, 85.0 feet north-northeast of a standard metal witness post and marker, 56.0 feet east-southeast of the approximate centerline of a very dim track woods road and about 16 inches lower than the station.

Reference mark 2, a standard disk stamped TWILLEY NO 2 1962, is set in top of a 10-inch square concrete monument projecting about 1 inch above the surface of the ground. It is 72.3 feet west-southwest of a standard metal witness post and marker, 59.5 feet west-southwest of a 14-inch pine tree, 6.5 feet east of a 10-inch pine tree and about station elevation.

Reference mark 3, a standard disk stamped TWILLEY NO 3 1962, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 22.0 feet south of a small stream, 9.0 feet west of the approximate centerline of a dim track woods road and 1.0 foot south of a standard metal witness post and marker.

Boundary Monument No. 1, a 12-inch square limestone monument with the letter M cut in on the west side and P on the east side, projecting about 26 inches above the surface of the ground, leaning slightly to the south and is in good condition. It is 46.0 feet north-east of a 14-inch pine tree, 28.5 feet east-northeast of a standard metal witness post and marker and 16.6 feet northeast of a 12-inch oak tree.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TWILLEY  
STATE: MARYLAND  
YEAR: 1962  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	38 28 28.1885	ELEVATION:	11.2 METERS
GEODETIC LONGITUDE	75 41 42.8323		37 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	N	E
DE	0700	420,246.10	172,916.32
MD	1900	1,173,538.57	236,165.25
			+ 0 10 24
			+ 0 49 08

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $P = (UR \Delta \cdot \Delta)$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
MD DEL COR RM 4	356 34 10.0	356 44 34	0700
MD DEL COR RM 4	356 34 10.0	355 45 02	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
Mar. Sur. Div.

NAME OF STATION: VANEERDE / STATE: Delaware COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson Year: 1961 Described by: Marvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.83 METERS; HEIGHT OF LIGHT ABOVE STATION MARK 2 METERS;  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS  
WHICH CAN BE SEEN FROM THE STATION

1a'	7a'	OBJECT	BEARING	DISTANCE	DIRECTION
		MILLPOND			
		Boundary Monument			
11a'		Reference Mark 1	N 43° (traverse)	29.535'	0 09 00.0
11a'		Reference Mark 2	N 38.06°	11.600'	143 22 50.82
11a'		Azimuth Mark	SE	40.03'	203 38 52.0
			SSW	12.199'	323 01 31.9
				Approx. 0.12 mile	335 51 12.70

The station is located about 2.0 miles south of Maryland, Delaware, 1.5 miles north-east of Henderson, Maryland and on property owned by Mr. M. E. Vaneerde.

To reach the station from the road south of the railroad station in Maryland, go south-southeast on a blacktop road for 1.0 mile to a fork. Take the right hand fork and go south on a gravelled road for 0.4 mile to a farm house on the left and a field road on the right and the azimuth mark about 100.0 feet southwest of the field road entrance. Turn right and go north-northwest on the field road for 0.2 mile to an old building site, the boundary monument, a standard metal witness post and marker and the station.

The station mark, a standard disk stamped VANEERDE 1961, is set in top of a 10-inch square concrete monument which is about 18 inches below the surface of the ground. It is 100.0 feet west of an old building site, 24.8 feet north-northwest of a standard metal witness post and marker and 27.0 feet north-northwest of a 36-inch poplar tree.

Reference mark 1, a standard disk stamped VANEERDE NO 1 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 62.0 feet north-east of a 36-inch poplar tree, 59.0 feet northeast of a standard metal witness post and marker and about 12 inches above the station mark.

Reference mark 2, a standard disk stamped VANEERDE NO 2 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 20.0 feet south-southeast of a standard metal witness post and marker, 20.9 feet south-southeast of a 36-inch poplar tree and about 24 inches higher than the station.

The azimuth mark, a standard disk stamped VANEERDE 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 110.0 feet west of a field entrance, 28.0 feet north of the center of the intersection of a gravelled driveway and gravelled road, 14.0 feet west of an underground telephone line and 2.0 feet south of a standard metal witness post and marker.

Boundary Monument No. 43, a 12-inch square limestone monument projecting about 30 inches above the surface of the ground, upright and firmly set and in good condition. It has the letter H cut on the west side and the letter P on the east side. It is 121.0 feet north-northwest of a standard metal witness post and marker and 99.6 feet north-northwest of a 36-inch poplar tree.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: VANEERDE  
STATE: DELAWARE  
YEAR: 1961  
SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 05 01.2888	ELEVATION	8.3 METERS
GEODETIC LONGITUDE	75 44 35.3330		27 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	407,319.16	394,811.04
MD	1900	1,156,767.01	457,811.95

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta \cos \Delta \theta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH (from north)	CODE
VANEERDE AZ MK	333 09 50.2	333 22 11	0700
VANEERDE AZ MK	333 09 50.2	332 22 30	1900

# HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
NATIONAL OCEAN SURVEY  
100 N. 10th St.  
NO. 100

NAME OF STATION: VINE  
STATE: MARYLAND  
YEAR: 1962  
SECOND ORDER

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF PARTY: R. W. Tomlinson  
YEAR: 1962  
Described by: Morvin W. Larabee

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK - 1.50 METERS  
HEIGHT OF LIGHT ABOVE STATION MARK - 2.0 METERS  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BLAZING	DISTANCE	DIRECTION
Desc. VINE AZIMUTH MARK (geod. distance)	SE	150.910	0 00 00.0
Desc. Boundary Monument	SE	7.945	02 23 29.9
11a Reference Mark	SSE	24.375	31 01 19.2
11a Reference Mark	WSW	62.39	123 26 50.0

The station is located about 7.0 miles west-northwest of Delmar, Delaware, 4.0 miles northeast of Mardela Springs, Maryland, 4.0 miles south-southeast of Sharptown, Maryland, in a dense woods land. The property on the east side of the line belongs to Mr. Clyde Cooper. The property on the Maryland side belongs to the Adkins Lumber Company.

To reach the station from Sharptown, Maryland; go south-southeast and east on State Highway 348 for 1.7 miles to the State Line. Continue east on Delaware State Highway 24 for 1.0 mile to a side road right. Turn right and go south on a blacktop road for 1.5 miles to a crossroad in the small village of Columbia, the Columbia Merchandise Store on the right, west, side of the road and the Columbia Church Building on the east side of the blacktop road. Turn right and go west on a blacktop road for 1.45 miles to a crossroad. Turn left and go south on a macedam road for 0.65 mile to a dim woods road on the east side of the blacktop road. Turn left and go east on the track woods road for 0.3 mile to a very dim crossroad. Turn left and go north on the dim track road for 0.15 mile to the end of the track road, a triangular blazed 8-inch pine tree at the end of road and truck travel. From the end of truck travel, pack northeast about 162.0 feet to a standard metal witness post and marker, Boundary Monument No. 2 and the station. To reach the azimuth mark from the station, pack southeast for 0.1 mile to a standard metal witness post and marker and the mark about 100.0 feet west of the east edge of timber. The station mark, a standard disk secured to the top of a 5/8 inch copper rod, stamped VINE 1962. The mark is flush with the surface of the ground, 162.0 feet northeast of a 10-inch triangular blazed pine tree and end of road, 29.8 feet north-northwest of a 10-inch triangular blazed oak tree, 18.1 feet north of a 30-inch oak tree, 15.3 feet south-southeast of a 10-inch pine tree and 4.0 feet south-southeast of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped VINE NO 1 1962, is set in the top of a 10-inch square concrete monument flush with the surface of the ground. It is 83.0 feet south-southeast of a standard metal witness post and marker, 12.8 feet north of a 8-inch pine tree, 12.8 feet east of a 6-inch oak tree and about station elevation.

Reference mark 2, a standard disk stamped VINE NO 2 1962, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 100.0 feet east of a dim woods road, 59.6 feet west of a standard metal witness post and marker, 24.0 feet east-northeast of a 30-inch oak tree, 15.0 feet north-northwest of a 24-inch holly tree and about station elevation.

The azimuth mark, a standard disk stamped VINE 1962, is secured to the top of a 5/8-inch copper rod flush with the surface of the ground. The rod is secured with concrete. It is 3.5 feet south of a 30-inch oak tree, 1.5 feet north-northwest of a standard metal witness post and marker and 1.5 feet south of a 8-inch pine tree.

Boundary Monument No. 2, a 12-inch square granite stone projecting about 20-inches above the surface of the ground, with the letter M cut in on its west side and P on the east side. The top part of this monument has been painted orange.

The monument has previously been broken off flush with the ground. At this date the stone was placed in its exact location, a small cross was inscribed in its top and center for traverse purpose. The stone was not reinforced at this date. Otherwise the stone is in good condition. It is 30.2 feet south-southeast of a standard metal witness post and marker, 8.6 feet north of a 12-inch oak tree, and 6.0 feet east of a 30-inch triangular blazed oak tree. A traverse connection was made to triangulation station Vine.

SOURCE: C-12731  
NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	38 29 20.4639	ELEVATION SCALED	14 METERS
GEODETIC LONGITUDE	75 41 46.8947		FEET

STATE COORDINATES (FATH)			
STATE & ZONE	CODE	X	Y
DE	0700	419,939.09	178,205.57
MD	1900	1,173,140.01	241,448.24
			+ 0 10 27
			+ 0 49 06

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \text{CUR} \Delta \theta$  FORMULA SELECTING THE SECOND TERM

STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH* (from north)	CODE
VINE AZ HK	307 51 49.5	308 02 16	0700
VINE AZ HK	307 51 49.5	307 02 44	1900

POSITION DETERMINED BY TRAVERSE FROM STATION VINE AZ HK



## HORIZONTAL CONTROL DATA

JUL 1977  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: WADE

STATE: Maryland

COUNTY: Caroline

CHIEF OF PARTY: R.W. Tomlinson

YEAR: 1962

Described by R.L. Wright

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS: 1  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
DEVORE	NNW	43.13	0 00 00.00
Desc. Boundary Monument No. 23 - (traverse)	ENE	73.54	167 40 21.6
Desc. Reference Mark 1	ENE	64.52	252 48 46.8
16a Azimuth Mark	S	Approx. 0.2 mile	254 31 42.6
			359 58 40.0

The station is located in a heavy wooded and swampy area, 0.5 mile south of the Pountainville, Interstate Lookout Tower, 7.0 miles northeast of Bridgeville, 8 1/2 miles southeast of Denton and on property owned by Mr. E. Harper of Bridgeville, Delaware.

To reach the station from the post office in Denton, Maryland, go southeasterly on State Highway 404 for 8.4 miles to a crossroad, 0.4 mile before reaching the Fountainville Lookout Tower, turn right and go southerly on the macadam road for 1.3 miles to a side road left, turn left and go easterly on the gravelled road for 0.47 mile to the corner of the woods and a field road on the left, turn left and go north on the field road for 0.2 mile to the south edge of the woods, turn right and go east along the north edge of the cultivated field for about 60 paces, turn left and go north along the east edge of the woods for 0.15 mile to the northwest corner of the cultivated field, turn right and go east along the north edge of the cultivated field for about 95 paces to the azimuth mark on the left, pack north through woods and swamp for about 0.2 mile to a standard metal witness and the station as described.

The station mark is a standard disk stamped WADE 1962, secured to the top of a 5/8 inch copper rod which projects 2 inches above the ground surface and 32 feet in the ground. It is located 0.9 feet south of a standard metal witness post and marker and 13.7 feet south of a 12-inch triangular blazed oak tree with the top broke off.

Reference mark 1 is a standard disk stamped WADE NO 1 1962, secured to the top of a 5/8 inch copper rod which projects 3 inches above the ground surface and is driven 16 feet in the ground. It is 63.0 feet east of the 12-inch triangular blazed oak tree and 64.6 feet east of the witness post.

Reference mark 2 is a standard disk stamped WADE NO 2 1962, secured to the top of a 5/8 inch copper rod which projects 3 inches above the ground surface and is driven 16 feet in the ground. It is 30.0 feet north-northwest of the 12-inch triangular blazed tree and 42.0 feet northwest of the witness post.

Azimuth mark, a standard disk stamped WADE 1962, set in top of a square concrete monument which projects 6 inches above the ground surface. It is 10.8 feet west of a 30-inch twin trunk oak tree, 11.6 feet east of a 28-inch oak tree and 12.0 feet north of the north edge of the cultivated field.

Boundary Monument No. 23 is a 12 X 12 inch limestone monument marked with the letters M and T. The monument was recovered in a prone position, it had been broken off about 3 inches below the ground surface. The base of the monument is in good condition. It is located 72.0 feet east of the 12-inch triangular blazed oak tree and 73.5 feet east of the witness post. Point observed and measured to was a cross mark scribed in the approximate center of the base of the monument.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WADE

STATE: MARYLAND

YEAR: 1962

SECOND GROUP

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION SCALED	12 METERS FEET
38 47 36.3485	75 43 13.8593		

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	GEODETIC AZIMUTH
DE	0700	413,391.42	289,092.29	- 0 11 25
MD	1900	1,164,672.33	352,200.02	+ 0 48 11

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \phi + \Delta \phi$  FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from south)	PLANE AZIMUTH (from south)	CODE
AZIMUTH MARK	356 46 29.1	356 57 54	0700
AZIMUTH MARK	356 46 29.1	355 58 18	1900

POSITION DETERMINED BY TRAVERSE FROM STATION DEVOKE



JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
WATER AND LAND

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: WALMSLEY. STATE: Maryland COUNTY: Queen Annes

CHIEF OF PARTY: R. W. Tomlinson YEAR: 1961  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 30.60 METERS  
DISTANCES AND DIRECTIONS TO AZIMUTH MARKS, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE	DIRECTION
DUNNING			
Boundary Monument NO 50 (traverse)	SE	79.30	24.170
11a Reference mark 1	SW	80.49	24.534
11a Reference mark 3	NW	266.08	81.100
11a Reference mark 2	N	90.08	27.455

The station is located in a dense low swampy woods land, on property of Mrs Martha G. Walmsley, about 0.0 miles east of Sudlersville, Maryland, 3.5 miles north-north-east of Templeville, Maryland and 2.5 miles northwest of Hartly, Delaware.

To reach the station from the crossroads in Sudlersville: go easterly on State Highway 300 for 5.0 miles to a fork at a point where Highway 300 curves to the left; continue straight ahead on a gravelled road for 0.65 mile to a dim track woods road. Turn left and go northeast on the woods track road for 0.25 mile to a woods crossroad. Turn sharp right and go about 100.0 feet to a standard metal witness post and the station. The station mark, a standard disk stamped WALMSLEY 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 16.0 feet north-northwest of a 18-inch tree with a triangular blaze and 3.0 feet north-northwest of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped WALMSLEY NO 1 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 83.6 feet west of a standard metal witness post and marker and is about the same elevation as the station.

Reference mark 2, a standard disk stamped WALMSLEY NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 91.5 feet north-northeast of a standard metal witness post and marker and about the same elevation as the station.

Reference mark 3, a standard disk stamped WALMSLEY NO 3 1961, is set in top of a 10-inch square concrete monument flush with the surface of the ground. It is 1.0 foot north-northwest of a standard metal witness post and marker, and about the same elevation as the station.

Boundary Monument No. 50, a 12-inch square stone projecting about 24 inches above the surface of the ground with the coat of arms inscribed on the east and west sides. The monument has been previously broken off about 10 inches above the surface of the ground and is presently just sitting in its original place. The upper part is in good condition. A small cross was etched in its top and center for traverse connection and intersection. It is 76.3 feet southeast of a standard metal witness post and marker and 66.5 feet southeast of an 18-inch triangular blazed tree.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WALMSLEY

STATE: MARYLAND YEAR: 1961

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE	39 11 07.1401	ELEVATION	21.4 METERS
GEODETIC LONGITUDE	75 45 06.1233		70 FEET

STATE COORDINATES (NAD 83)

STATE & ZONE	CODE	X	Y	# OF ANGLES
DE	0700	405,027.79	431,854.28	- 0 12 42
MD	1900	1,153,833.26	494,788.16	+ 0 47 01

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi/\cos \Delta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From meridian)	PLANE AZIMUTH (From meridian)	CODE
DUNNING	177 52 42.3	178 05 24	0700
DUNNING	177 52 42.3	177 05 42	1900

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: WARREN  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: C.L. Novak  
YEAR: 1961 STATE: Delaware  
YEAR: 1975 COUNTY: New Castle  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles northeast of Chesapeake City  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
Azimuth Mark RM 3	SE	(0.35 mile) 41.96	12.789	+ 0 00 00.0
New Boundary Monument NO. 75	SW		198.669	121 05 31
Compute the point on Boundary line	NNW			218 26 53.0
RM 1	ENE	43.49	13.256	219 43 42.1
				308 50 40

The station mark, reference mark 1 and the azimuth mark were recovered and found in good condition. Reference mark 2 was found destroyed. A new reference mark 3 was established in the near same position as the former reference mark 2. The boundary monument number 75 has been destroyed. The monument is now in the prone position near where reference mark 1 is set. The old position of the monument was re-established and a iron stake drove on the point where the Maryland-Delaware lines meet. There is a separate report on Boundary Monument number 75.

A complete new description of the station follows.

The station is located 5 1/2 miles south of Glasgow Delaware, 2 miles northeast of Chesapeake City and just east of the State Line. The property is owned by John Losten Dairy Inc., Route 2, Chesapeake City. To reach the station from the center of the small town of north Chesapeake City, go east on a paved road for 2.0 miles to a side road left and the azimuth mark on the right. Turn left and go north on a paved road for 0.35 mile to a highline crossing. Turn left and go west across a field for 0.35 mile to the top of a small rolling hill and the station.

The station mark is a standard disk stamped WARREN 1961, set in the top of a 10-inch square concrete monument which is 18-inches below the surface. It is 46 feet west of a witness post and 44 feet east of a witness post. (NOTE 1a 7a)

Reference mark 1 is a standard disk stamped WARREN NO 1 1961, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 2 feet west of a witness post. (NOTE 11a)

Reference mark 3 is a standard disk stamped WARREN 1961 NO 3 1975, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 2 feet east of a witness post. (NOTE 11a)

The azimuth mark is a standard disk stamped WARREN 1961, set in the top of a 10-inch square concrete monument which is 2-inches below the surface. It is 43 feet southwest of a powerline pole numbered J 205, 21 feet southwest of the center of the T-intersection, 13 feet south of the center of the paved road and 2.1 feet north of a witness post. (NOTE 16a)

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WARREN  
STATE: DELAWARE  
YEAR: 1961  
SECOND ORDER

SOURCE: G-12731

STATE & ZONE	CODE	STATE COORDINATES (FATH)	ELEVATION	15.7 METERS 52 FEET
DE	0700	397,472.73	563,291.16	- 0 13 53
MD	1900	1,143,994.61	626,071.45	+ 0 45 56

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \mu \cdot R \cdot \Delta$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
AZIMUTH MARK	307 32 55.5	307 46 49	0700
AZIMUTH MARK	307 32 55.5	306 46 59	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: WARREN  
ESTABLISHED BY: R.W.T.  
RECOVERED BY: C.L. Novak  
YEAR: 1961 STATE: Delaware  
YEAR: 1977 COUNTY: New Castle  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 miles northeast of Chesapeake City  
HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
AZIMUTH MARK	SE	(0.35 mile) 41.96	12.789	+ 0 00 00.00
BOUNDARY MONUMENT #75	SW		198.669	121 05 31
#HP 3800 EDM	ENE	43.49	13.256	219 43 42.1

The station mark was recovered and found in good condition. The reference marks were not dug down to. The ground was froze to about 16 inches.  
The Maryland-Delaware Boundary Monument number 75 was reset at this date. See description thereof.

JUL 1977

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY - NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **WARWICK** STATE: **Delaware** COUNTY: **New Castle**

CHIEF OF PARTY: **R.W. Toolinon** YEAR: **1961** Described by **J.L. Wright**

NOTE: RIGHT OF THIS STATION ABOVE STATION MARK **1.04** FEET; RIGHT OF LIGHT ABOVE STATION MARK **1.0** FEET.

15 - Surface station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE CHIRING AT THE STATION

OBJECT	BEARING	DISTANCE	OBJECTS
<b>LAWRENCE 1934</b>	<b>SN - 61.76°</b>	<b>24.921'</b>	<b>0 00 00.00</b>
<b>Reference Mark 2</b>	<b>64.69</b>	<b>19.7778</b>	<b>50 03 46.6</b>
<b>Boundary Monument No. 67 (traverse)</b>	<b>888</b>	<b>90.23</b>	<b>151 07 56.9</b>
<b>Reference Mark 1</b>	<b>SE -</b>	<b>27.507</b>	<b>293 44 25.2</b>
<b>160 Azimuth Mark</b>	<b>SE -</b>	<b>Approx. 0.85 mile</b>	<b>501 40 59.2</b>

The station is located in a pasture field, 1.0 mile north of Warwick, 3.0 miles west-southwest of Middletown on property owned by Mr. Horace Powell.

To reach the station from the post office in Warwick, go east on State Highway 202 for 1.0 mile to a gravelled lane left, just before reaching the junction of U.S. Highway 501, turn left and go north on the gravelled lane for 0.4 mile to the azimuth mark on the left, continue north on the gravelled lane for 0.15 mile to a gate on the left, at the north end of the barn lot, turn left and go through the gate between two buildings and continue across the pasture field for 0.15 mile to a large lone tree and the station mark as described.

The station mark is a standard disk stamped **WARWICK 1961**, set in top of a square concrete monument which is 12 inches below the ground surface. It is 52.7 feet north of a standard metal witness post and markers 52.6 north of the east and west fence line and 159.0 feet west-northwest of a lone elm tree.

Reference mark 1 is a standard disk stamped **WARWICK MO 1 1961**, set in top of a 10-inch concrete cylinder which is flush with the ground surface. It is 0.73 feet north of the east and west fence line, 55.0 feet west of the lone elm tree and 72.5 feet east of the witness post.

Reference mark 2 is a standard disk stamped **WARWICK MO 2 1961**, set in top of a 10-inch concrete cylinder which is flush with the ground surface. It is 0.5 feet north of the east and west fence line, 65.0 feet west of the witness post and 190.5 feet west of the lone elm tree.

Boundary Monument No. 67 is a 11 x 11 inch limestone monument with the letter P on the east side and the letter W on the west side and projects about 20 inches above the ground surface. The monument was recovered in good condition but is leaning considerably south-southeast. It is 116.0 feet north of the east and west fence line, 116.6 feet north of the witness post and 163.0 feet northwest of the elm tree.

Azimuth mark is a standard disk stamped **WARWICK 1961**, set in top of a square concrete monument which is flush with the ground surface. It is 0.5 feet west of a north and south fence line, 2.0 feet north of a powerline pole number 55; 14.6 feet west of the approximate center of the gravelled road and 162.0 feet north of a field entrance.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **WARWICK** YEAR: **1961** SECOND ORDER

STATE: **DELAWARE**

SOURCE: **C-12731**

GEODETIC LATITUDE	39 25 53.7698	ELEVATION	20.5 METERS
GEODETIC LONGITUDE	75 46 16.7196		67 FEET

STATE COORDINATES (F/77)

STATE & ZONE	COMP	N	E	PLAN AZIMUTH (From level)	CHIR
DE	0700	399,820.66	521,581.48	- 0 13 31	
MD	1900	1,147,067.75	506,408.91	+ 0 56 16	

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA  $\theta = \theta_{100} \Delta \theta$  SELECTING THE SECOND 1961

TO STATION OR OBJECT	GEODETIC AZIMUTH (From level)	PLAN AZIMUTH (From level)	CHIR
AZIMUTH MARK	298 03 16.9	298 16 48	0700
AZIMUTH MARK	298 03 16.9	297 17 01	1900



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

WHARTON (New Castle Co., Del., J.B., Jr., 1934)

the property of W.O. Wharton, in a small clearing surrounded by woods, 76 feet SE of a 24-inch black jack tree, 62 feet NNE of the center line of a dirt road, and 25.5 feet W of a 30-inch hollow sweet gum tree. The station projects 6 inches above ground and is stamped "WHARTON 1934." This is a second-order station.

Surface, underground and reference marks are standard bronze disks set in concrete as described in notes 1a, 7a, and 11a. Reference mark No. 1 is 18.27 feet S of the station, 25.5 feet NE of the center line of a dirt road, 9.5 feet W of an 18-inch oak tree with a stump on the N side, 8.6 feet N of a 30-inch oak tree with a stone embedded in the foot which is on the Delaware-Maryland boundary. The mark is in a fence line and on the Delaware-Maryland boundary. The mark projects 6 inches above ground and is stamped "WHARTON NO. 1 1934." A 103-foot tower cleared lines.

Reference mark No. 2 is 68.32 feet WSW of the station, and 11 feet SSW of the center line of a dirt road. The mark is flush with the surface of the ground and is stamped "WHARTON NO. 2 1934." Azimuth mark is approximately 0.3 mile NNW of the station, approximately 0.15 mile NE of the main dirt road, 74 paces NW of a group of peach trees, and 2 feet SE of a fence line. The mark is visible from the ground with clearing. The mark projects 6 inches above ground and is stamped "WHARTON AZIMUTH MARK 1934." To reach the station from the post office at Maceesey go N on a concrete road for about 2.3 miles to mileage marker #23 and a dirt cross road, then turn right on a dirt road and follow the main-travelled road for about 2.4 miles to a cross road which is about 75 yards E of Oat railroad station, turn right on a dirt road for about 0.8 mile to a bend in the road and the station.

OBJECT DISTANCE  
WOODALL  
AZ. MK. (NNW) (V.O. with clearing) 0.3 mile (approx.) 67 00 50.65  
R.M. 1 (S) 18.27 feet 260 55 25.3  
R.M. 2 (WSW) 68.32 feet 349 32 25.8

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION WHARTON  
ESTABLISHED BY J.B. Jr.  
RECOVERED BY R.W. Tomlinson  
YEAR 1934  
STATE Delaware  
COUNTY New Castle

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
LAMBERSON 2				
Reference Mark 4	(Note 11a)	217.50	66.293	0 00 00.60
Reference Mark 1	(Note 11a)	48.27	14.715	07 25 46.5
Reference Mark 3	(Note 11a)	67.97	20.717	80 35 55.6
				194 29 33.5

The station work, reference mark 1 was recovered as described and found in good condition. Reference mark 2 was destroyed due to road construction. The azimuth work was searched for but not recovered. It is believed to have been destroyed due to conservation. Reference marks number 3 and 4 was established.

The description was found to be adequate except that the road to Goite is now paved and the railroad station is gone.

Reference mark 3 is a standard disk stamped WHARTON NO. 3 1934, set in top of a square concrete monument which projects 1-inch above the ground surface. It is 50.0 feet northeast of the approximate center of the gravelled road, 67.6 feet west-northwest of a standard metal witness post and marker 61.0 feet northeast of an 18-inch triangular bleached oak tree and is about the same elevation as the station mark.

Reference mark 4 is a standard disk stamped WHARTON NO. 4 1934, set in top of a square concrete monument which projects 6 inches above the ground surface. It is 1.9 feet west-northwest of a standard metal witness post and marker, 5.0 feet south of an 8-inch triangular bleached oak tree and 24.0 feet north of the approximate center of the gravelled road.

The Hanson and Dixon Boundary Monument was not recovered.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION WHARTON  
STATE DELAWARE  
YEAR 1934  
SOURCE G-12731  
SECOND ORDER

GEODESIC LATITUDE	39 19 51.6171	ELEVATION	24.5 METERS
GEODESIC LONGITUDE	75 45 47.4530		HD
STATE COORDINATES (1927)			
STATE & ZONE	COORD	"	"
DE	0700	401,976.50	484,930.77
HD	1900	1,149,860.40	547,801.86
			- 0 13 11
			+ 0 46 35

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE FORMULA:  $\Delta \theta = \frac{1}{R} \Delta \theta$ , FORMULA SELECTING THE SECOND TERM

TO STATION OR OBJECT	GEODESIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	COORD
AZIMUTH MARK	153 49 03.7	156 02 16	0700
AZIMUTH MARK	153 49 03.7	153 02 29	1900

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION WHARTON  
ESTABLISHED BY L.A.L.  
RECOVERED BY C.L. Novak  
YEAR 1934  
STATE Delaware  
COUNTY New Castle  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN, 3 miles southeast of Sassafras  
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET.  
HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 4 (EDM1)	E	217.48	66.288	0 00 00.00
RM 1	SSE	48.28	14.715	09 23
BOUNDARY MONUMENT #60	W	2.09	0.638	171 53 00.0

The station and all marks were recovered and found in good condition as described in the previous description. The distances and direction to all marks were within close agreement with the previous observations. The Maryland-Delaware Boundary Monument number 60 was reset at this date, see description thereof. Due to the high water table, the reference mark 3 could not be located at this date, however it is believed still intact.



# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

WHITE (Dorchester County, Md., J.B. Jr., 1934)--The second-order station is 21.05 miles NW of Salisbury, Md. (by road) 4.55 miles by road NNE of Sharptown, Md. It is 10.435 meters NW of the Delaware-Maryland Boundary Monument, (also U.S.G.S. BM, EL. 20). It is on the property of Mr. Joseph Ellis, in the E edge of pine woods, 0.15 mile SW of Mr. J.H. White's house. The Boundary Monument is the dividing line between Mr. White's and Mr. Ellis' property. Mr. White's is the cultivated land on the Delaware side and Mr. Ellis' is the woods on the Maryland side. The station mark is 37 feet S of a 24-inch pine tree with a triangle blaze on the S face.

Surface, underground, and reference marks are standard bronze disks set in concrete, as described in notes 1a, 7a, and 11a. Reference mark No. 1, azimuth mark, is 0.25 mile NE of the station, in the E edge of woods, on the SE side of rounding field.

Reference mark No. 2 is SSE of the station, 21 feet W of the center line of the road, at the foot of an 8-inch hickory tree, 68 feet SSW of the Boundary Monument, it projects 3 inches above ground.

Reference mark No. 3 is W of the station, 100 feet WSW of the 24-inch pine tree with the blaze, 138 feet W of the road, it projects 3 inches above ground.

To reach the station from Salisbury, Md., go NW on Highway 213, 11.4 miles to the intersection with State Highway 313, at Mardela Springs, here turn right N on 313 and go 6.0 miles to Sharptown, at the intersection of 313 and the Laurel road, continue on 313, 0.5 mile and turn left and go 1.05 miles over bridge across Nanticoke River to a T-road, leave highway 313 here and turn right and go 1.55 miles to Galestone and cross roads. Turn right over bridge and fill and continue northerly for 2 miles. (This point is 50 yards S of Mr. White's house). Turn sharp right at N end of Pine Woods, and go 0.1 mile along farm road to station, and Boundary Monument. The Boundary Monument is a granite shaft 2 1/2 feet high and 12 inches square, it is on the E edge of the woods 60 feet SE of the 24-inch pine tree with the blaze, 10 feet W of the center line of the N-S farm road which is on the dividing line between the two properties. It is 10.435 meters SE of the station.

A 103-foot tower necessary.

OBJECT DISTANCE

OAK GROVE  
R.M. 1, Az. Mk. 0.25 mile  
Md.-Del. Bound. Mon. 10.435 meters  
R.M. 2 82.54 feet  
R.M. 3 96.93 feet

DIRECTION  
0° 00' 00" 0  
73° 05' 29.6  
112° 06' 16  
165° 17  
275° 24' 51

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: WHITE  
ESTABLISHED BY: J.B. Jr.  
RECOVERED BY: R.W. Tomlinson  
YEAR: 1934  
STATE: Maryland  
COUNTY: Dorchester

HEIGHT OF TELESCOPE ABOVE STATION MARK 31.80 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 34.33 METERS.  
DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
FEDERAL 2				
DELA			1659.260	0 00 0.00
Azimuth Mark -			0.1 mile	30 01 00.30
Boundary Monument	N	approx	25 49 26.6	
Reference Mark 2	SSE	(34.245)	141 40 11.8	
Reference Mark 3	SSE	82.52	25.151	194 44 05.8
	N	96.90	29.536	304 51 57.2

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WHITE  
STATE: MARYLAND  
YEAR: 1934  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	38 35 25.5988	ELEVATION	8.3 METERS
GEODETIC LONGITUDE	75 42 15.7273		27 FEET

STATE COORDINATES (FATH)				
STATE & ZONE	CODE	X	Y	# (ON Δ) U. ANGLE *
MD	1900	1,170,323.52	278,348.84	+ 0 48 48
DE	0700	417,762.09	215,150.73	- 0 10 46

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # (ON Δ) Δ 81 FORMULA, NEGLECTING THE SECOND TERM

TO STATION OR OBJECT		GEODETIC AZIMUTH (FROM TRUE)	PLANE AZIMUTH* (FROM TRUE)	CODE
AZ MK 1962		175 55 19.4	175 06 32	1900
AZ MK 1962		175 55 19.4	176 06 05	0700
AZ MK RM 1 1934		249 37 52.4	248 49 05	1900
AZ MK RM 1 1934		249 37 52.4	249 48 38	0700

The station mark and reference marks 1 2 and 3 were recovered as described and found in good condition. The old azimuth No. 1 was destroyed and a new one was set for the station.

The old description of the station and the to reach are adequate.

The new azimuth is a standard disk stamped WHITE 1934 RESET 1962, set in the top of a 10 X 10 inch square concrete monument, that is flush with the ground surface. It is 1.0 foot northeast of a telephone pole; 9.0 feet southwest of a gravel driveway; 73.0 feet west of macadam road; 10 inches northeast of a standard metal witness post.

To reach the new azimuth from the station, go north on the field road for 0.08 mile to the macadam road, go northerly on the macadam for 0.02 to a driveway left, turn left, boundary Monument No. 9, is a 12 X 12 inch square monument, projecting 30 from the ground surface. It is 9.7 feet west of a field road; 39.7 feet southeast of a standard metal witness post; 4.0 feet southeast of a 12 inch oak tree.

A traverse connection was made to triangulation station WHITE 1934, distance being 10.438 meters and (34.245) feet east-southeast of station WHITE 1934, distance being

## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: WHITELEY

ESTABLISHED BY: L.A.I.

YEAR: 1934 STATE: Delaware

COUNTY: Kent

BENCH MARK ALSO ☐

RECOVERED BY: C.L. Novak

YEAR: 1976

LINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 1/4 mile southeast of Whitesleysburg

HEIGHT OF TELESCOPE ABOVE STATION MARK: 5 FEET.

HEIGHT OF LIGHT ABOVE STATION MARK: FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RM 3	NW	(1/2 mile)		0 00 00:00
RM 1	ENE	113.23	34.51	105 53 14
RM 4	ESE	170.27	51.89	185 58 01
BOUNDARY MONUMENT 34	W	7.99	2.43	307 32 05.6
MONUMENT 34 to RM 4		174.60	53.21	
MONUMENT 34 to RM 1		120.64	36.77	

The station surface disk was recovered and found in good condition in the top of the old Maryland-Delaware Boundary Monument number 34. It was removed and the sub-surface disk was also found in good condition. The old Maryland-Delaware Monument number 34 was then reset 8 feet to the west on the State Line and a new station surface disk set directly over the old sub-surface disk. Reference Mark one and the azimuth mark (RM 3) were recovered in good condition. Reference Mark 2 was not found and believed destroyed. A new Reference Mark 4 was set at this date.

A complete new description of the station follows.

The station is located about 1/4 mile southeast of Whitesleysburg, 3 1/4 miles east-southeast of Greensboro, and 18 1/2 miles southwest of Dover. It is on property owned by Mr. Marvin Semney and Mr. Semney lives just northeast of the station.

To reach from the intersection of Maryland State Highway 314, Delaware State Highway 12, Delaware County Road 452 and 59 in the small town of Whitesleysburg, go south-southwest on Delaware State Highway 12 for 0.1 mile to the end of truck travel in wet weather. Turn left and go east across a cultivated field for 0.2 mile to the station just west of a wooded area and in the cultivated field.

The station surface mark is a standard disk stamped WHITELEY 1934 1976 set in the top of a 12 by 20 inch mass of concrete which is 14 inches below the surface. This sub-surface disk is stamped WHITELEY 1934, set in an 8-inch mass of concrete 40 inches below the surface. They are 177 feet north of a field ditch, 173 feet northwest of a witness post, 93 feet west of the west edge of a wooded area, and 6 feet northeast of a witness post. (NOTE 1c 7a)

Reference Mark one is a standard disk stamped WHITELEY NO 1 1934 set in the top of a 10-inch square concrete monument which is flush with the surface. It is 120 feet north of a witness post and 8 feet east of east edge of a field. (NOTE 11a)

Reference Mark 4 is a standard disk stamped WHITELEY 1934 NO 4 1976 set in the top of a 10-inch round concrete monument which is flush with the surface. It is 174 feet southeast of a witness post, 150 feet north of southwest corner of wooded area at this ditch, 8 feet east of east edge of field, and 2 feet south of a witness post. (NOTE 11b)

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WHITELEY

STATE: DELAWARE

YEAR: 1934

SECOND ORDER

SOURCE: G-12731

GEODETIC LATITUDE GEODETIC LONGITUDE	38 57 10.8882 75 43 58.4632	ELEVATION NO CHECK		19.85 METERS 65.1 FEET
STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	S UTM Δ & ENCLIP *
DE	0700	410,061.15	347,229.72	- 0 11 56
MD	1900	1,160,334.50	410,267.83	+ 0 47 43

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S 1020 Δ 41 FORMULA SELECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)		PLANE AZIMUTH (From north)		CODE
AZ MK RM 3	138 54	25.1	139 06	21	0700
AZ MK RM 3	138 54	25.1	138 06	42	1900

The azimuth mark is a standard reference mark disk stamped WHITELEY NO 3 1934, set in the top of a 10-inch square concrete monument which is flush with the surface. It is 25 feet west of powerline pole numbered 60 166-23, 18 feet south of the center of State Highway 314, and 1.8 feet north of a witness post. To reach the azimuth mark from the crossroads in Whitesleysburg, go west on State Highway 314 for 0.3 mile to the mark on the left. (NOTE 11a)

For additional information, see description for the Maryland-Delaware Boundary Monument number 34.

Additional descriptive information for this station may be obtained from the National Geodetic Survey.

# HORIZONTAL CONTROL DATA

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
187, Aug. 1954

NAME OF STATION: MONDER • STATE: Delaware COUNTY: Kent

CHIEF OF PARTY: R. W. Tomlinson, YEAR: 1961, Described by: Marvin H. Larabee  
NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.51 METERS, HEIGHT OF LIGHT ABOVE STATION MARK 34 METERS  
1a Surface-station mark, DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION  
7a Under-ground-station mark

OBJECT	BEARING	DISTANCE	DIRECTION
SZELESTEI		feet	meters
11a Reference mark 1	S	89.07	27.148
Boundary Monument	S	(82.70)	25.228
11a Reference mark 3	N	172.37	52.538
11a Reference mark 2	N	82.05	25.008

The station is located in a dense woods and low swamp area, property owned by Mr. Szelestei, about 2.0 miles southwest of Hartly, Delaware and about 1.5 miles north-east of Templeville.

To reach the station from the post office in Templeville, Maryland; go east about 100 yards to a side road left. Turn left and go north-northeast on a gravelled road for 2.0 miles to a triangular blazed tree on the right at a pile of rubbish and no dumping sign and a dim track road. Turn right and go south on the woods road for 0.3 mile to a dim cross road and a triangular blazed tree on the right in a reasonable open area in the woods. Turn right and go east-northeast on a woods road for 0.1 mile to a fork. Take the right fork and continue east on the woods road for 0.15 mile to a fork, about 100.0 feet before reaching the corner of a cultivated field and an old bridge over a ditch, the bridge is in poor condition. Turn sharp left and go south-southwest on a track woods road for 0.3 mile, keeping the main traveled road to a triangular blazed tree on the left. Turn left and go southeast on a very dim track woods road for 0.15 mile to a standard metal witness post and marker, the boundary monument and the station. The station mark, a standard disk stamped MONDER 1961, is set in top of a 10-inch square concrete monument projecting about 3 inches above the surface of the ground. It is 57.0 feet east of a 24-inch triangular blazed oak tree, 19.2 feet north-north-east of a 8-inch triangular blazed oak tree and 6.0 feet west of a standard metal witness post and marker.

Reference mark 1, a standard disk stamped MONDER NO 1 1961, is set in top of a 10-inch square concrete monument, projecting about 5 inches above the surface of the ground. It is 89.0 feet south of a standard metal witness post and marker and about station elevation.

Reference mark 2, a standard disk stamped MONDER NO 2 1961, is set in top of a 10-inch square concrete monument projecting about 4 inches above the surface of the ground. It is 87.0 feet west-northwest of a standard metal witness post and marker, 24.0 feet west of a 24-inch triangular blazed oak tree and about station elevation.

Reference mark 3, a standard disk stamped MONDER NO 3 1961, is set in top of a 10-inch square concrete monument projecting about 5 inches above the surface of the ground. It is 47.0 feet south of woods road and 1.1 feet northeast of a standard metal witness post and marker.

Boundary Monument No. 49, a 12-inch square concrete monument projecting about 30 inches above the surface of the ground, badly eroded at the bottom. The upper part is in good condition, but slightly out of plumb. It is 87.7 feet southwest of a standard metal witness post and marker, 79.0 feet southwest of a 8-inch triangular blazed oak tree.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MONDER  
STATE: DELAWARE  
YEAR: 1961  
SOURCE: G-12731  
SECOND ORDER

GEODETIC LATITUDE	39 09 23.1710	ELEVATION:	20.7 METERS
GEODETIC LONGITUDE	75 44 56.2080		68 FEET

STATE COORDINATES (Feet)			
STATE & ZONE	CODE	X	Y
DE	0700	405,770.00	421,332.44
MD	1900	1,154,758.06	484,281.24

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\phi$  OR  $\Delta$   $\phi$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)		PLANE AZIMUTH (from north)		CODE
	$\phi$	$\Delta$	$\phi$	$\Delta$	
SZELESTEI	176 33	57.0	176 46	32	0700
SZELESTEI	176 33	57.0	175 46	50	1900



## HORIZONTAL CONTROL DATA

JUL 1977  
U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

by the  
National Ocean Survey  
NORTH AMERICAN 1927 DATUM

## DESCRIPTION OF TRIANGULATION STATION

## ADJUSTED HORIZONTAL CONTROL DATA

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY  
Form 888  
Rev. Aug 1965

NAME OF STATION: WRIGHT

STATE: Maryland

COUNTY: Caroline

CHIEF OF PARTY: R.W. Tomlinson

YEAR: 1962

Described by: E.O. Kasperl

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.51 METERS

NOTE: 1. Sufficiently marked distances and directions to azimuth mark, reference marks and prominent objects which can be seen from the ground at the station

OBJECT	BEARING	DISTANCE	DIRECTION
1a	SE	598.959	0 00 0.0
1b	SE	0.4 mile	177 02 40
1c	SE	7.571	201 56 50.9
1d	SE	17.075	275 20 35
1e	SE	9.890	

Station is located about 1.0 mile north of the small settlement of Reliance, 5.0 miles southeast of Federalsburg Maryland, and about 5.5 miles west of Seaford Delaware, on the property owned by Mr. George Wright.

To reach the station from the intersections of Main Street and Central Ave. in Federalsburg Maryland, go east on Central Ave. for 0.2 mile to a side street right turn right, go southerly on State Highway 313 for 1.7 miles, highway 313 turns to the right, continue southeasterly on State Highway 577 for 2.8 miles to azimuth on the right, continue on State Highway for 0.1 mile to a side road on the left, turn left go east on road that leads to a saw mill for 0.35 mile to an old cabin in the edge of the woods, here turn left go north on an old woods road for 0.15 mile to station on the right.

Station Mark, a standard disk stamped WRIGHT 1962, set in the top of a 10 X 10

inch square concrete monument, projecting 2 inches from ground surface. It is 61.0 feet northwest of a standard metal witness post; 15.4 feet east of center of woods road; 14.6 feet west of a 12 inch pine tree.

Reference Mark No. 1, a standard disk stamped WRIGHT NO. 1 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 1 inch from the ground surface. It is 21.0 feet east of a standard metal witness post; 12.4 feet northeast of a 12 inch pine tree; 40.3 feet east of center of woods road.

Reference Mark No. 2, a standard disk stamped WRIGHT NO. 2 1962, set in the top of a 10 X 10 inch square concrete monument, projecting 2 inches from ground surface. It is 29.9 feet south of a standard metal witness post; 15.5 feet east of center of woods road; 55.0 feet south-southeast of a 12 inch pine tree.

Azimuth Mark, a standard disk stamped WRIGHT 1962, set in the southeast head well of a 12 inch culvert, projecting 4 inches from ground surface. It is 19.0 feet south-west of center of State Highway 577; 20.0 feet southeast of center of driveway; 9.0 feet north of a standard metal witness post.

Boundary Monument No. 13, a 12 X 12 inch square monument, projecting 30 inches from ground surface, with an M on the west side and a P on the east side. It is 26.9 feet east-southeast of a standard metal witness post; 50.3 feet east-southeast of a 12 inch pine tree; 68.6 feet east of a woods road.

NAME OF STATION: WRIGHT

STATE: MARYLAND

YEAR: 1962

SECOND ORDER

SOURCE: G-12731

NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE	GEODETIC LONGITUDE	ELEVATION SCALED	14 METERS FEET
38 38 54.3887	75 42 32.4669		

STATE COORDINATES (FZII)

STATE & ZONE	CODE	X	Y	PLANE AZIMUTH * (from north)
DE	0700	416,500.21	236,277.00	- 0 10 57
MD	1900	1,168,695.88	299,449.17	+ 0 48 37

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta = \sin^{-1} \Delta \theta$  FORMULA & NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (from north)	PLANE AZIMUTH * (from north)	CODE
WRIGHT AZ MK	78 42 32.0	78 53 29	0700
WRIGHT AZ MK	78 42 32.0	77 53 55	1900

POSITION DETERMINED BY TRAVERSE FROM STATION WRIGHT AZ MK



## REFERENCES

- American Philosophical Society, 1969: "The Journal of Charles Mason and Jeremiah Dixon," Philadelphia, Pa., 231 pp. (transcribed from the original in the U.S. National Archives with an Introduction by A. Hughlett Mason).
- Bayliff, William H., 1959: "The Maryland-Pennsylvania and the Maryland-Delaware Boundaries," Bulletin 4, Second Edition, Maryland Board of Natural Resources, Annapolis, July, 120 pp.
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- Hodgkins, W.C., 1893: "Appendix No. 8 - 1893," *U.S. Coast and Geodetic Survey Report for 1893—Part II*, Washington, D.C., pp. 177-215.
- Kelley, James A., 1973: "The Transpeninsular Line," *The Archeolog*, Vol. XXV, Sussex Society of Archeology and History, Sussex, Delaware, pp. 12-18.
- Meade, Buford K., 1964: "Delaware-Maryland North-South Boundary Resurvey of 1961-62," *Journal of the American Congress on Surveying and Mapping*, Vol. XXIV, No. 1, March, pp. 33-36.
- Munroe, John A., 1978a: (College of Arts & Science, Department of History, University of Delaware, Newark) "Identification of the Present State of Delaware," dated July 7, 1978, personal letter to Buford K. Meade.
- Munroe, John A., 1978b: *Colonial Delaware—a History*, kto Press, Millwood N.Y., 312 pp.
- National Bureau of Standards, 1959: "Refinement of Values for the Yard and the Pound," *Federal Register*, Vol. 24, No. 128, Office of the Federal Register, National Archives and Records Service, General Services Administration, Washington, D.C., July 1, p. 5348.
- National Oceanic and Atmospheric Administration (with cooperation from the States of Delaware and Maryland), 1978: "The Mason/Dixon Line: Commemoration of the Resurvey of the Mason/Dixon Line (North-South Boundary); Maryland-Delaware Route 404 at the Mason/Dixon Line; Monday, June 26, 1978." U.S. Department of Commerce, NOAA/NOS National Geodetic Survey, Rockville, Md. 8 pp.
- U.S. Congress, 1955: "Coast and Geodetic Survey—Resurvey Common Boundary—Maryland and Delaware," *Law of 84th Congress—1st Session, Aug. 11*, Chapter 780, Public Law 342, S. 987, 24 16 U.S. Congressional Act (U.S.C.A.) 11 461-467, Washington, D.C. p. 710.
- Numerous citations in the text such as agreements, amendments, instructions, meetings, memoranda, recommendations, and reports have not been referenced. These documents are available at the Department of Commerce, NOAA/NOS National Geodetic Survey, Rockville, Md.



Type of boundary disc established in resurvey of Delaware-Maryland boundaries in 1976 and 1981.



Courtesy of: Joseph F. Dracup

*This commemorative monument stands at a point on the north-south boundary where the Mason-Dixon Line intersects with Maryland route 404. (See preface, page iii, for details.)*



## Part Three

### Appendixes



(A)



(B)

Courtesy of: Ralph Poust

*Boundary Monument marking the northeast corner of Maryland, set by Graham in 1849. The original stone at this boundary corner, set by Mason and Dixon on June 18, 1765, was destroyed in the early 1800's. (A) West (Maryland) side of corner stone. (B) North (Pennsylvania) side of corner stone.*



FIGURE 10.—Reproduction of original map in the agreement between Lord Baltimore and Penn heirs (from appendix E).



# APPENDIX A

## COOPERATIVE AGREEMENT FOR A RESURVEY OF THE DELAWARE-MARYLAND EAST-WEST BOUNDARY

This agreement provides for a cooperative program between the States of Delaware and Maryland and the National Ocean Survey for the purpose of performing a geodetic survey along the east-west boundary of the States of Delaware and Maryland on a cost-sharing basis. The estimated total cost of the geodetic survey portion of this program is approximately \$120,000 of which each party to this agreement will pay one-third or approximately \$40,000. This estimate does not include the cost of purchasing and setting additional boundary stones after the boundary delineation has been made. The cost of geodetic measurements necessary for establishing or resetting boundary stones, however, is included in the estimate.

The National Geodetic Survey, a component of the National Ocean Survey, by this agreement will provide geodetic surveys along the boundary line from the vicinity of Fenwick Island to the vicinity of Boundary Stone Middle Point. The survey will be made a part of the National Geodetic Horizontal Control Network to insure accurate future definition of the boundary in the event boundary stones become disturbed or destroyed. Geodetic data resulting from this survey will be available to anyone upon request as is the normal practice of the National Geodetic Survey. (See the references.) Primary stations will be established by the National Geodetic Survey in the vicinity of the 5-mile boundary stones; and where the 5-mile boundary stones cannot be found, stations will be established in close proximity of the described locations. Additional stations at 1-mile intervals will be established by joint effort of the NGS and the States. The NGS will also assist the States in research and computations for a determination of the true location of the boundary line. Offset computations will be made from the new points established by the NGS to the location of the boundary as

determined by this joint effort. The NGS will provide geodetic assistance in establishing or resetting the boundary stones in the agreed-to locations.

The States hereby agree to establish a working group in conjunction with the NGS in an effort to ascertain the true boundary delineation and to assist in any way possible to assure the success of this program. The States agree to assist the NGS in the reconnaissance phase of the program. This will involve the selection of the sites for primary geodetic control stations, which will require the use of steel towers and the obtaining of permission of the property owners on whose land the points will be established. The States also agree to provide observers to determine that the program is being carried out in a fair and objective manner.

The NGS will require adequate facilities for parking of approximately 16 to 20 mobile homes utilized by the geodetic field party personnel for living accommodations. Assistance from the States may be necessary to meet this requirement.

NOS participation in this project is subject to budgetary limitations and administrative approval. Parties to this agreement may withdraw at any time prior to actually starting the project or by giving 30-days' written notice prior to withdrawal.

State of Delaware participation in this project is subject to budgetary limitations and administrative approval.

SIGNED	DATE
Allen L. Powell, Director National Ocean Survey	August 7, 1973
Robert R. Jordan, Chairman Delaware State Boundary Commission	September 27, 1973
Kenneth N. Weaver, Director Maryland Geological Survey	October 5, 1973

## APPENDIX B

### MEMORANDUM OF UNDERSTANDING BETWEEN THE STATE OF DELAWARE AND THE STATE OF MARYLAND CONCERNING THE RESURVEY OF THE TRANSPENINSULAR (EAST-WEST) BOUNDARY LINE

Authorized representatives of the State of Delaware and the State of Maryland meeting at the Cabinet Room, Townsend Building, Dover, Delaware, on May 7, 1975, agree to the following propositions concerning the Transpeninsular (east-west) Boundary Line between our States for the purpose of furthering the clear re-establishment of a monumented boundary. These agreements are not to be construed as a final, formal acceptance of the position of the boundary by either State.

1. We accept the positions of the original boundary stones designated 0, 5, 10, 20, and 35 as indicating the position of the boundary as presently understood.

2. Both parties have previously agreed that the pin under a manhole cover approximately 12 feet north of the present location of original stone 25 represents the true position of that stone. The stone has been relocated because of highway construction.

3. The report of the National Geodetic Survey by B. K. Meade, dated March 27, 1975, indicates the positions of 1-mile boundary markers to be set between the original stones and the pin mentioned above.

4. Parties representing the State of Delaware, the State of Maryland, and the National Geodetic Survey will examine, in the field, the positions of 1-mile boundary markers indicated by the National Geodetic Survey Report of March 27, 1975, to determine the reasonableness of these locations for the placement of monuments. It is understood that the positions indicated may be adjusted along the line the minimum distances necessary to avoid physical obstacles, but will always be positioned

on the line between existing original stones or the pin at location 25.

5. The field party shall accomplish its work as soon as practicable and report to a joint meeting of authorized representatives of the States their recommendations for the final positions of 1-mile boundary markers.

6. Markers used to indicate the position of the boundary at 1-mile intervals shall be set in accordance with standard practices of the National Geodetic Survey. A brass disc will surmount the markers on which will be indicated the date of its placement and the Delaware and Maryland sides of the boundary. More elaborate markers may be emplaced in the future if deemed desirable by the two States.

7. On the basis of the establishment of the Transpeninsular Line on land, the States of Delaware and Maryland will continue to work together to attempt to achieve a mutually satisfactory extension of that line seaward from our shores into the Atlantic Ocean.

Signed by representatives of the two States as follows:

STATE OF  
DELAWARE  
State Boundary  
Commission

by: Robert R. Jordan  
John A. Munroe  
William C. Bradley  
Grover A. Biddle  
John C. Bryson

STATE OF  
MARYLAND  
Department of Natural  
Resources, Maryland  
Geological Survey

by: Kenneth N. Weaver

## APPENDIX C

### JOINT AGREEMENT BETWEEN THE STATES OF DELAWARE AND MARYLAND

WHEREAS, 29 Delaware Code, Section 202, and 58 Laws of Delaware Chapter 102, and Joint Resolution No. 14, established the Delaware State Boundary Commission; and

WHEREAS, Section 2-402 of the Natural Resources Article of the Maryland Code authorizes and directs the Maryland Geological Survey to examine every monument marking the boundaries of the State, to cooperate with other States to replace, restore, and repair boundary monuments and to make any joint agreement with appropriate officials of adjacent states to delineate more clearly any part of any common boundary; and

WHEREAS, the north-south boundary between Maryland and Delaware, known as the Mason-Dixon Line, was originally surveyed and marked in the years 1763 to 1768; and

WHEREAS, this Mason-Dixon Line was approved by the Legislature of Delaware in 1775; and

WHEREAS, during the intervening years many of the monuments marking the north-south boundary line between Maryland and Delaware have been moved or destroyed; and

WHEREAS, authorized representatives of the State of Delaware and the State of Maryland have met together at Dover, Delaware, on May 7, 1975, for the purpose of considering the locations and marking of points determining the common boundary of the States along the line surveyed by Messrs. Mason and Dixon and known as the Mason-Dixon Line. These deliberations have been attended by representatives of the National Geodetic Survey who have contributed their knowledge and expertise to the resolution of matters before us. Antecedent reports of the National Geodetic Survey and all other information available to the representatives of the States have been reviewed and discussed together with a report of a reconnaissance party consisting of representatives from each State and the National Geodetic Survey that examined each monument and proposed monument location in the field during February, 1975.

NOW, THEREFORE, we are agreed to the following findings concerning the Mason-Dixon Line:

1. Those original boundary stones recovered in good condition and for which no evidence has been discovered indicating that they may have been displaced from their original position shall continue to represent the true and correct position of the mutual boundary of the

States of Delaware and Maryland. The specific stones so identified include all of those not identified as exceptions in the following paragraphs. Stones are considered to have been moved from their original positions if they have been determined to lie more than 4 feet from the median line of all stones remaining on the boundary determined in the 1961-62 resurvey of the Mason-Dixon Line by the U.S. Coast and Geodetic Survey.

2. Boundary stones in the positions identified by the numbers 7, 10, 12, 42, 60, 61, 64, and 79 are missing; and all attempts to locate them have failed. These stones are to be replaced by markers consisting of brass discs placed in accordance with standard practice of the National Geodetic Survey in accordance with the positions indicated in the report titled "Boundary Summary" and dated April 10, 1975.

3. Boundary stones in the positions designated by the numbers 11, 18, 20, 34, 37, 46, 63, 72, 73, 75, and 77 have been recovered but are found to be displaced from their original positions. These original stones shall be reset in accordance with the report titled "Boundary Summary" and dated April 10, 1975. Except that the original stone, recently recovered, which reportedly occupied position number 11 shall be reset in position number 42, which is deemed more appropriate due to the physical conditions of the sites.

4. The boundary stone designated as number 0, and also known as Middle Point, is accepted as designating a point on the Mason-Dixon Line; but Maryland and Delaware are unable to agree at this time that Middle Point designates the Southern terminus of that line or is a point on the line known as the Transpeninsular Line.<sup>1</sup>

APPROVED,  
STATE OF  
DELAWARE  
State Boundary  
Commission

by: Robert R. Jordan  
William C. Bradley  
John A. Munroe  
Grover A. Biddle  
John C. Bryson

STATE OF  
MARYLAND  
Department of Natural  
Resources

by: Kenneth N. Weaver

<sup>1</sup> In a Joint Resolution of January 26, 1979 and a Joint Agreement of November 26, 1980, officials of the States of Delaware and Maryland agreed that Middle Point is the junction of the east-west and north-south boundaries between the States. Therefore, the middle point monument is recognized as the western terminus of the Transpeninsular Line (east-west boundary) and the southern terminus of the north-south boundary.



## APPENDIX D

### LORD HARDWICKE'S DECREE IN PENN VS. BALTIMORE

HIS LORDSHIP DOTH DECLARE that the articles of agreement of the tenth day of May, One Thousand Seven Hundred and Thirty-Two, are valid and obligatory upon the several parties who executed the same or the endorsements thereon and their heirs and assigns and that the said articles are to be specifically executed and performed as between the said parties respectively notwithstanding that the several periods of time therein mentioned and agreed upon are elapsed but that the said articles do not bind or prejudice any prerogative, proper title or interest of the crown in or to the territories, districts or tracts of lands comprised in the said articles or any part thereof, nor any estate, right, interest, or possession of any planted proprietors, tenants, or occupiers of any lands or tenements within the said territories, districts or tracts of in or to any lands, tenements or hereditaments lying within the same which the parties aforesaid had not a right or power by virtue of the respective charters or grants under which they claim to bind or to include. AND HIS LORDSHIP doth therefore order and decree that the said articles of the tenth of May, One Thousand Seven Hundred and thirty-two and the several matters and things therein contained be performed and carried into execution by and between the said parties and every one of them and to that end Hio further ordered that the plaintiffs, Thomas Penn and Richard Penn the father in their own right and as standing in the place of XAXA John Penn, deceased, and the defendant the Lord Baltimore do respectively before the end of three calendar months from this day execute under their hands and seals the several proper instruments appointing and authorizing proper persons not more than seven on each side with full powers to the said seven persons respectively or any three or more of them for the actual running in and laying out the part of a circle and the several lines in the said articles mentioned and such commissions are to give due notice to each other and to affix and agree upon a time or times to begin and proceed in the running or marking and laying out the same, and it is further ordered that the same be begun at ye furthest sometime in the month of November next and be proceeded in according to the said articles and that the said lines be marked out with feasible stones, posts, trees, pillars, buildings, landmarks or other certain boundaries which may remain and continue, and it is further ordered that such boundary be marked on one side with the arms of the said defendant the Lord Baltimore and on the other side with the arms of the plaintiff's, the Penns, and that such lines be completely so run, marked laid out on or before the last day of April, One Thousand, Seven Hundred and Fifty-two. When so done it is further

ordered that a true and exact plan and survey thereof with the best and most exact and accurate descriptions that can be given on the same be made up, signed and sealed by the said Commissioners on both sides and by their principals and be entered in all the public offices in the provinces of Maryland and Pennsylvania and the three lower Counties of New Castle, Kent, and Sussex, and that a true copy of such respective instruments for appointing Commissioners when prepared be delivered by the solicitors of the one party to the solicitors of the other party and in case the party shall then doubt such instruments or either of them, it is further ordered that it be referred to Mr. Spicer, one of the masters of this court to settle the same, and two questions in particular having been raised in America by the Commissioners formerly appointed by the defendant the Lord Baltimore and being now in this cause (Viz) whereto a part of the circle agrees by the said articles to be drawn about the town of New Castle therein mentioned ought to be fixed and whether the said area ought to be of a radius or semi-diameter of twelve lines or only of a periphery of twelve miles, and a third question being also made in this cause Viz at what place the cape called in the said articles Cape Henlopen is situated, his Lordship Doth Declare that he is of opinion that according to the true intent and instruction of the said articles the center of the said circle ought to be fixed in the middle of the town of New Castle as near as the same can be computed and that the said circle ought to be of a radius or semi diameter of twelve miles and that Cape Henlopen ought to be deemed and taken to be situated at the place where the same is laid down and described in the map or plan annexed to the said articles to be situated, and therefore His Lordship Doth further order and decree that the said articles be carried into execution accordingly and after the said limits and boundaries shall be so set out and ascertained by said Commissioners, his Lordship Hio further ordered that the plaintiff, Thomas Penn and Richard Penn the father, in their own right and as standing in the place of the said John Penn deceased, and the defendant the Lord Baltimore, to respectively release and convey to each of them and their heirs their respective rights, titles, interests, powers, prerogatives, claims, demands and pretensions in and to the respective territories, districts and lands severally allotted to them according to the Fourth Article contained in the said Articles of Agreement at the costs and charges of the person or persons to whom such release and conveyance shall be made and the said Master is to settle such releases and conveyances if the parties then doubt the same, and all proper parties are to join in such releases and convey-



ances as the said Master shall direct. But this decree is to be without prejudice to any prerogative, power, property title or interest of His Majesty, his heirs and successors in and to the said territories and districts or tracts of land or any part thereof and also to any estate, right, interest or possession of any of the said planters, proprietors, tenants, or occupiers of, in or to any lands, tenements or hereditaments lying within the same which the parties of the said articles hath not a right or power by virtue of the respective charters or grants under which they claim to bind or (word illegible) and in case His Majesty, his heirs or successors, shall insist upon any power, title or right whatsoever, either on behalf of His Majesty, his heirs or successors or any of his or their subjects residing in or being possessed of or interested in any lands, tenements or hereditaments lying within any of the said territories, districts or tracts of land so as to hinder or obstruct or interrupt the effectual execution or performance of the said articles or any part thereof, then and in every such case any of the parties are to be at liberty to apply to this court from time to time as they shall be advised and His Lordship doth reserve the consideration of any further or other directions to be given as between the plaintiffs and the defendants the Lord Baltimore and the defendants claiming under William Penn, Esquire, deceased, upon any such

application and it is further ordered that the plaintiffs do pay unto the defendant the Earl Pollitt the costs of this suit to be taxed by the said Master and that the defendant the Lord Baltimore do pay unto the plaintiff their costs of this suit to this time to be taxed by the said Master, and His Lordship doth reserve consideration of the subsequent costs and all further directions and the time here-in-before limited for the performance of the articles shall be expired and any parties are to be at liberty to resort to the Court as there shall be occasion. **THEREFORE** we strictly enjoin and command you the said Charles Calvert, Esquire, Lord Baltimore in the kingdom of Ireland effectually to perform full power and execute all and every the matters and things specified and contained in the said decreetal order so far as the same anywise concern you according to the tenor and true meaning thereof and hereof and fail not at your peril.

Witnesses:

Thomas, Archbishop of Canterbury  
and of all guardians and justices  
of the kingdom at Westminster  
the 27th day of October  
in the 24th year of our reign.

STRANGE WHITTINGTON

(Appendixes D and E are reproduced from copies of the decrees obtained from Bureau of Archives and Records in Dover, Delaware.)

## APPENDIX E

### FINAL AGREEMENT BETWEEN LORD BALTIMORE AND PENN HEIRS

INDENTURE OF AGREEMENT, &C., BETWEEN LORD BALTIMORE AND THOS. AND RICH'D PENN, ESQR'S, 4TH JULY, 1760.

THIS INDENTURE, made the Fourth Day of July, in the Thirty-fourth year of the Reign of our Sovereign Lord George the Second, by the Grace of God, of Great Britain, France and Ireland, King, Defender of the Faith, and so forth, and in the year of our Lord one thousand seven hundred and sixty, BETWEEN The Right Honourable Frederick, Lord Baron of Baltimore, in the Kingdom of Ireland, only Son and Heir at Law, Devisee and Residuary Legatee of the Right Honourable Charles, late Lord Baltimore, deceased, and as such, or under some or one of the Settlements hereinafter mentioned, true and absolute Lord and Proprietary of the Province of Maryland, in America, of the one part, and Thomas Penn and Richard Penn, Esquires, Sons and Devisees, under the Will of William Penn, Esquire, their late father, deceased, and true and absolute Proprietarys of the Province of Pensilvania, and Three Lower Counties of Newcastle, Kent and Sussex, on Delaware, in America, of the other part. WHEREAS the said Frederick Lord Baltimore, under and by virtue of a certain Charter or Letters Patent, bearing date on or about the Twentieth Day of June, which was in the Eighth Year of the Reign of his late Majesty King Charles the First, and made and granted unto Cecelius then Baron of Baltimore, since deceased, the Great Grandfather of the said Frederick Lord Baltimore, and to his Heirs and assigns, stands seized of and well entitled unto the said Province of Maryland, bounded and described and restrained as in the said Charter is mentioned. AND WHEREAS the said Thomas Penn and Richard Penn, under and by virtue of a certain other Charter, or Letters Patent, bearing date on or about the Fourth Day of March, which was in the Thirty-third year of the Reign of His late Majesty King Charles the Second, and made and granted unto the said William Penn, since deceased, late Father of the said Thomas Penn and Richard Penn, and to his Heirs and Assigns, stand seized of and well entitled, unto the said Province of Pensilvania, bounded and described and restrained as in the said last mentioned Charter is expressed. AND ALSO, under and by virtue of three other Charters or Letters Patent, the first of the same bearing date on or about the Twelfth Day of March, which was in the Sixteenth Year of the Reign of the said late King Charles the Second; The second of the same bearing date on or about the Twenty-ninth day of June, which was in the Twenty-sixth Year of the Reign of his said late Majesty King Charles the Second; and the third of the same, bearing date on or about the Twenty-second day of March, which was in

the Thirty-fifth Year of the Reign of the said late King Charles the Second, all the same three last mentioned Charters, or Letters Patent, being made and granted unto his Royal Highness, James, then Duke of York, afterwards King of England, but since deceased, and to His Heirs and Assigns. And also under and by virtue of two several Indentures of Feoffment, with Livery and Seizen and Covenants for further Assurance, each of the same bearing date on or about the Twenty-fourth Day of August, which was in the Year of our Lord One Thousand Six Hundred and Eighty-two, and made and granted by the said James Duke of York, unto the said William Penn, deceased, and to his Heirs and Assigns, and under and by virtue of other mesne Assurances and Conveyances, stand seized of and well entitled to the said Three Lower Counties of Newcastle, Kent and Sussex, on Delaware, in America, bounded and described in such manner as in the said last-mentioned Charters and Indentures of Feoffment, or in some or one of them, are mentioned and described.

AND WHEREAS the said Three Lower Counties of Newcastle, Kent and Sussex, were heretofore called by the name of Delaware, or the Province of Delaware, AND some part of the said Province of Maryland, and also part of the said Three Lower Counties do lie within a certain Peninsula in America, hereafter mentioned, AND the said Provinces of Maryland and Pensilvania, and the said Territory now called the Three Lower Counties of Newcastle, Kent and Sussex, lying adjacent and contiguous, (at least in some parts of the same) each unto the other, very long Litigations and Contests have subsisted, from the Year One Thousand Six Hundred and Eighty-three, down to the present time, and many orders have been pronounced in Council relative thereto. AND WHEREAS, in order to put an end to Litigations and Contests, certain indented Articles of Agreement, bearing date on or about the Tenth Day of May, which was in the Year of Our Lord One thousand Seven Hundred and Thirty-two, were after long and great deliberation entered into and made and executed, under Hands and Seals, and by and between the said Charles, late Lord Baltimore, Father of the said Frederick Lord Baltimore, on the one part, and John Penn, Esquire, the late elder Brother of the said Thomas Penn and Richard Penn, and since deceased, without issue, and the said Thomas Penn and Richard Penn, on the other part, upon the side of which said Articles of Agreement, the like Draft, Plan, Diagram or Figure was printed, or impressed, as is printed or impressed upon one of the skins of parchment whereon this present indenture is engrossed, AND in and by which said Articles of Agreement, (after reciting as therein is recited,) it was agreed (amongst



other things) in the words or to the effect following, that is to say, "Now THEREFORE THESE PRESENT ARTICLES WITNESS, That it is hereby mutually and reciprocally covenanted, promised, declared and agreed, by each and every one of the Parties to these Presents, for Himself, and his Heirs, Executors and Administrators, to and with all and every other of the same Parties to these presents, and their several and respective Heirs, Executors and Administrators, in manner and form following, that is to say,

"FIRST, That the Draft or Plan printed upon the margin of this Skin of Parchment which contains a Map of the Peninsula hereinbefore mentioned, and also of the tracts of ground wherein the said Province of Maryland (or part thereof) the said Three Lower Countys, Part of the said Province of Pensilvania and part of Virginia do lye, is a true copy of those which had been sent over from America to the present partys hereto by their respective Agents in those parts, for the assistance and guidance of the said partys in the settling of the said disputes, and by which this present agreement is to be explained and understood.

"SECOND, that there shall be the said circle mentioned in the said charter for Pensilvania, and Deed of Bargain and Sale or Feoffment of Newcastle, (or so much thereof as is requisite) drawn and markt out at the twelve miles distance from the Town of Newcastle, which twelve miles shall be twelve English Statute miles.

"THIRD, That a due East and West line shall be drawn across the said Peninsula (or across so much of it as shall be requisite) such East and West line to begin on the East part at the Place in the said Draft or Map called Cape Henlopen (which lyes South of Cape Cornelius,) upon the Eastern side of the said Peninsula towards the Main Ocean, and at the point of the said Cape, and to run towards the Western side of the said Peninsula, which lyes upon the Chesopeak Bay, but to stop in the exact middle of that part of the same Peninsula, when so running a due East and West course.

"FOURTH, That from the Westward point or end of the said East and West line (which Westward point or end shall be just half way across the said Peninsula,) a straight line shall run Northward, up the said Peninsula, (and above the said Peninsula if it require it) till it shall so touch the Western part of the periphery of the said circle as to make a tangent thereto. The said strait line as at present apprehended will run pretty near South and North, but (however it may bear on the compass) such strait line shall be run Northward up the said Peninsula (and above the said Peninsula if it require it,) and shall begin at and from the Western point or end of the aforesaid East and West line, and shall run until it touches and makes a Tangent to the Western part of the said periphery of the said circle, and there the said straight line shall end.

"FIFTH, That at the Northern point or end of the said strait line, a line shall begin, and shall from thence run due North above the said Peninsula, but so far only until it comes into the same Latitude as Fifteen English Statute Miles, due South of the most Southern part of the City of Philadelphia.

"SIXTH, That a due East and West line shall be run in manner following. It shall begin at the Northern point or end of the said due South and North line, and shall from thence run due West across Susquehannah River, to the utmost Western extent of the said Province of Pensilvania, or so far as in part thereof as shall be at present requisite in regard that as the same is to be due East and West line, the beginning part thereof may be sufficient to continue the same by when further occasion shall require, and when the lands Westward in the said Provinces of Maryland and Pensilvania shall be better settled, and that it would occasion a very great expence, and likewise be at present needless, to run the same to the utmost extent Westward of the said Province of Pensilvania, however the same shall at present be run across Susquehannah River, and about twenty-five English Statute Miles further on the Western side of the said River.

"SEVENTH, That the part of Circle at present drawn with Red Ink upon the said Draft or Plan, and the Red Lines also drawn thereupon, are now drawn to serve as an Explanation to this present Agreement, but not with exact certainty in regard to the said Drafts or Plans so sent over to the Parties as aforesaid, have neither scale or compass to them.

"EIGHTH, That the first above mentioned, due East and West Line, to run from Cape Henlopen to the Middle of the Peninsula, and the said strait Line to run from the Westward Point thereof Northwards up the said Peninsula, (and above the said Peninsula, if it require it,) till it touches or makes a Tangent to the Western part of the Periphery of the said Twelve Miles Circle, and the said due South and North Line to run from such Tangent, till it meet with the Upper or more Northern East and West Line, and the said Upper East and West Line to begin from the Northern point or end of the said South and North Line, and to run due Westward at present cross Susquehanna River, and Twenty-five English Statute Miles at least on the Western side of the said River, and to be Fifteen English Statute Miles South of the Latitude of the most Southern part of the said City of Philadelphia, are and shall be, and shall at all times for ever hereafter, be allowed and esteemed to be the true and exact Limits and Bounds between the said Province of Maryland and the said Three Lower Counties of Newcastle, Kent and Sussex, and between the said Provinces of Maryland and Pensilvania, excepting only, that in case the said North Line from the Tangent of the Circle of Newcastle shall break in upon the said Circle. In such case, so much of the said Circle as shall be cut off by the said Line, shall belong to and be part of the County of Newcastle:

"PROVIDED ALWAYS, and it is hereby mutually covenanted, concluded and agreed by and between the Partys to these presents, that in case it shall happen in the running or setting out the Lines or Boundaries hereby agreed upon, that the Head or Heads of any River or Rivers leading either into the Bay of Chesopeak or into the Bay of Delaware, or into the Sea, shall remain on one side the Lines and Boundaries hereby agreed to be run or set out, and that the lower part of such River or

Rivers, shall remain within or run through the other Province or Countys, and on the other side of such Lines and Boundaries, then and in such case this Present Agreement, or any matter or thing herein contained is not intended, and shall not in any wise be construed, or extended to give or yield to the People or Inhabitants of the Province or Countys within whose limits the Heads of any such River or Rivers shall, according to this present agreement, fall or remain any sort of Right or Title, to carry on any Commerce into the said Bays of Delaware or Chesapeake, or either of them, or into the Sea, through the lower parts of such River or Rivers which may run through the Territory or Limits of any other Province or Countys, without the leave or licence of the respective Proprietor or Proprietors of the Province or County through whose Territories such Lower parts of the said River or Rivers shall run, first duly had and obtained; This agreement or any thing therein contained to the contrary thereof, in any wise notwithstanding.

"NINTH, That the said Charles Lord Baltimore, and his Heirs and Assigns on his part, and the said John Penn, Thomas Penn and Richard Penn, and their several respective Heirs and Assigns on their parts, shall and will, by fit and proper powers and instruments, within two calendar months from the day of the date of these Presents, authorize and appoint a sufficient number of discreet and proper persons, not more than seven on each side, to be their respective Commissioners, with full power to the said seven Persons, or any three or more of them, for the actual running, marking and laying out the said part of a Circle, and the said before mentioned Lines, which said Commissioners shall give due and proper notice to each other, and shall fix and agree upon a Time or Times, to begin and proceed in the running, marking, and laying out the same; and the same shall be begun at the farthest, some time in the Month of October next, and shall be proceeded in with all fairness, candour and dispatch that may reasonably be; and the said Lines shall be marked out with the visible Stones, Posts, Trees, Pillars, Buildings, Land-marks, or other certain Boundaries, which may remain and continue such Boundaries, to be marked on one side with the Arms of the said Charles Lord Baltimore, and on the other side with the Arms of the Proprietors of Pensilvania, and such Lines shall be compleatly so run, marked and laid out, [as far as by this Agreement is intended,] on or before the twenty-fifth day of December, one thousand seven hundred and thirty-three, and when so done, a true and exact Plan and Survey thereof, with the best and most exact and certain Descriptions that can possibly be given of the same, shall be made up and signed, and sealed by the said Commissioners on both sides, and by their principals, and shall be entered in all the Public Offices in the said several Provinces and Countys. And moreover, it shall be recommended by the respective Proprietors to the Assemblys of the said several Provinces and Countys, forthwith to Pass Acts of Legislature for the Visitation, upon certain fixed days, to be agreed on on both sides, (at least once in every three years,) and for the continual reparation of the said Boundaries and Bound Marks, that no Disputes may hereafter arise concerning the same;

"PROVIDED ALWAYS, And it is hereby agreed, that in case a sufficient Quorum of the Commissioners to be named on either side shall not from Time to Time, according to the Appointments and Adjournments to be made for that purpose, Attend to, Proceed in the marking and running out the Lines and Bounds aforesaid, for want whereof, the same cannot be done within the Time before limited, Then this Present Agreement and every Article and Thing herein contained shall cease, determine, and be void. And then and in such case the Party or Partys, whose Commissioners shall make such default, his or their Heirs, Executors or Administrators, shall and will forfeit and pay to the other Party or Partys, whose Commissioners shall attend his or their Executors or administrators upon Demand, the sum of five thousand Pounds of lawful money of Great Britain.

"TENTH, That the said Charles Lord Baltimore, for himself and his Heirs, doth by these Presents forever renounce, release, and quit claim unto the said John Penn, Thomas Penn and Richard Penn, and their Heirs, All Rights, Titles, Interests, Powers, Prerogatives, Claims, Demands and Pretensions to the said Province of Pensilvania, and to the said Three Lower Countys of Newcastle, Kent and Sussex, to be so bounded as aforesaid, [part at least of the same Three Lower Countys being now known to be comprized within the bounds mentioned in the said Charter of Maryland,] and shall also at he request and Cost in the Law of the said John Penn, Thomas Penn and Richard Penn, and their Heirs, grant, convey and assure in the most effectual manner, the said Province of Pensilvania, and the said Three Lower Countys to be bounded as aforesaid, and all his and their Right, Title, Interest, Powers, Claims and Demands, in and to the said Province of Pensilvania and the said Three Lower Countys to be so bounded as aforesaid, and every part of the same, free of all incumbrances, by the said Cecelius, Baron of Baltimore, Great Grand-father of the said Charles Lord Baltimore, Charles, Grand-father of the said Charles Lord Baltimore, Benedict, Father of the said Charles Lord Baltimore or by him the said Charles Lord Baltimore, Party hereto, his Heirs or Assigns, excepting such Grants and Agreements to Planters, as hereinafter mentioned, unto the said John Penn, Thomas Penn and Richard Penn, and their Heirs, TO HAVE AND TO HOLD, unto the said John Penn, Thomas Penn and Richard Penn, and their Heirs, to the only Use and Behoof of them and their Heirs, forever, in such manner as by them the said John Penn, Thomas Penn and Richard Penn, or their Heirs, or their Council learned in the Law, shall be reasonably devised, advised and required. AND, on the other hand, the said John Penn, Thomas Penn and Richard Penn, for themselves and their Heirs, do by these Presents forever renounce and quit claim unto the said Charles Lord Baltimore, and his Heirs, All Rights, Titles, Interests, Powers, Prerogatives, Claims, Demands and Pretensions to the said Province of Maryland, to be so bounded as aforesaid [part whereof when so bounded being apprehended to be comprized within the bounds mentioned in the said Charter for Pensilvania,] and shall also at the request and Cost in the



Law of the said Charles Lord Baltimore, and his Heirs, grant, convey and assure, in the most effectual manner, the said Province of Maryland, to be so bounded as aforesaid, and all their and every of their Right, Title, Interest, Powers, Claims and Demands, in and to the said Province of Maryland, to be so bounded as aforesaid, and every part of the same [free of all incumbrances by the said Willam Penn the Grand-father, William Penn the Father, Springett Penn, Esquire, deceased, William Penn, the Son, John Penn, Thomas Penn and Richard Penn, their Heirs or Assigns,] excepting such Grants or Agreements to Planters as hereinafter mentioned, unto the said Charles Lord Baltimore and his Heirs, TO HAVE AND TO HOLD, to the said Charles Lord Baltimore and his Heirs, To the only Use and Behoof of him and his Heirs forever, in such manner as by him or them, or his or their Council learned in the Law shall be reasonably devised, advised and required.

“ELEVENTH, AND WHEREAS, during the disputes which have hitherto subsisted, and now are accommodated, between the Partys to these Presents, divers Persons under Grants, Patents, Leases, Warrants, Licences and Agreements, made and granted from, and agreed with, the said Charles Lord Baltimore, and his Ancestors, before the Fifteenth day of May, one thousand seven hundred and twenty-four, may have cleared, occupied and possessed several Parcels of Lands within the limits and bounds hereby yielded and agreed upon for the said Province of Pensilvania, and for the said Three Lower Countys. And in like manner other Persons, under Grants, Patents, Leases, Warrants, Licences and Agreements, made and granted from and agreed with the said John Penn, Thomas Penn and Richard Penn, or their Ancestors before the said Fifteenth day of May, One Thousand Seven Hundred and Twenty-four, may have cleared, occupied and possessed several Parcels of Lands within the limits and bounds hereby yielded and agreed upon for the said Province of Maryland, and it may be proper to quiet such Occupiers and Possessors in their respective Possessions, [which might otherwise be disturbed by this present agreement of the Proprietors,] under some restrictions.

“IT IS THEREFORE mutually agreed, that in order to the Information of the Partys to these Presents touching the Premises, each of the said Proprietors shall have full and free liberty to take Copys at their respective Costs and Charges of all Grants, Patents, Leases, Warrants, Licences and Agreements, which at any Time before the said fifteenth day of May, one thousand seven hundred and twenty-four, have been made or granted by the respective Proprietors or their Ancestors, and under which any of the said Occupiers do hold or Claim any such Parcels of Land. AND in order to quiet and settle such Occupiers, every of them shall and may, upon request and payment of the accustomed Fees in such cases only, have new Grants or Patents from the respective Proprietors, within whose Territory or Limits their Lands, by virtue of or according to this present Agreement shall lye, for the like Estate, Term and Interest is mentioned in their original Grants, Warrants, Leases, Licences or Agreements.

“UPON CONDITION that the said Occupiers respectively, do first Attorn and become Tenants to their respective Proprietors, within whose Territories or Limits their Land now lye, by virtue of or according to this Present Agreement, and do submit themselves in all things to the Government thereof, and do pay to their new Proprietor or Proprietors [unless it shall be dispensed with by him or them] All such Fines, Rents, and Arrearages of Rent and Dutys, as by their Original Grants, Licences or Agreements, were to have been paid to their former Grantor or Proprietor, and which have not been really and bona fide paid to or to the use of such their former Proprietor. AND for the time to come such Occupiers shall be put upon the like Foot and Condition with the rest of the Occupiers and Tenants, who hold Lands in such Parts of the said respective Provinces and Countys as have never been in contest. AND such Occupiers and Tenants claiming originally under another Proprietor as aforesaid, shall hold their Lands and have Patents thereof granted them by their new Proprietor, subject to the like Fines, Rents, Quit-Rents, Duties, Services and Reservations, as the other Landholders are and have been generally subject to, in the respective Provinces and Countys to which they shall belong.

“PROVIDED, ALWAYS, that in cases where any persons, during the disputes which have subsisted between the said Proprietors, have Taken double Titles, that is to say, from both the said Proprietors or their Commissioners or Officers, under which they may have sheltered themselves by Turns, against each of the said Proprietors, and also in cases where any Persons during the said disputes, have, of their own authority, seated themselves down upon any Parcels of Lands without Licence or Authority in Writing, from either of the said Proprietors, such persons in respect of such Lands, are by no means to be included in this present article, but are (however) to be treated with Moderation and with some Regard, and the more so, in case they have heretofore actually paid the usual Quit-Rents and Services to either of the said Proprietors, and provided they bring in, Surrender, or yield up their former Grant, Licence, Warrant, Lease or Agreement, and Submit to hold only under the proper Lord or Proprietor, as the case may be.

“TWELFTH, That in case the Partys hereto can conclude upon any further clauses in favour of the Occupiers of any Lands within the Bounds heretofore disputed, But by these Presents fixed and determined, the same shall be contained in a subsequent Agreement between them. LASTLY, That all the Partys hereto and their Representatives, shall at all Times hereafter, use all friendly Means and Offices to the utmost of their Power, to assist and support this present Agreement, and the several and respective Rights, Interests and Pretensions of the Partys by virtue hereof.”

Or to some such or the like Effect, As by the said recited Articles of Agreement, Relation being thereunto had, may appear. AND WHEREAS, the said Charles, late Lord Baltimore, on his Part, and the said John Penn, Thomas Penn and Richard Penn, on their part, severally

and respectively executed Commissions, authorizing sundry Persons, as their respective Commissioners, carry the said articles of Agreement into Execution, and to run, mark, and lay out the said Part of a Circle, and the said before mentioned Lines, by the said Articles of Agreement agreed upon, but sundry Objections there-to being raised in America, by the Commissioners on the Part of the said Charles, late Lord Baltimore, the same Articles of Agreement were not carried into Execution; Nor were the several Lines, Part of a Circle, and Boundaries therein agreed upon, markt and run out by the Time mentioned, and agreed upon in the said Articles of Agreement; AND after the Time for completing the Execution of the said Articles had been expired, to wit, on or about the Eighth day of August, one thousand seven hundred and thirty-four, the said Charles, last Lord Baltimore, caused to be Presented a Petition in his own Name, to his Present Majesty in Council, Praying that his Majesty would, by a farther Charter or Letters Patent, confirm unto him, the said Charles, late Lord Baltimore, and his heirs and assigns, the whole of such Part of the said Peninsula as was contained within the limits of the said Charter, (which had been granted to the said Cecilius, Baron of Baltimore.) Notwithstanding the Words *hactenus inculca*, in the Recital of the said former Charter or Letters Patent inserted, or to some such or the like Effect; Which said Petition was opposed by a Counter Petition, which was Presented to his Present Majesty in Council, on or about the nineteenth day of December, one thousand seven hundred and thirty-four, on behalf of the said John Penn, Thomas Penn and Richard Penn. AND after Refferences of each of the said Petitions, and several hearings of Council for the respective Petitioners thereon, and after a Report made upon the said Petition of the said Charles, late Lord Baltimore, his Majesty was most graciously pleased, by his order in Council, bearing date on or about the sixteenth day of May, one thousand seven hundred and thirty-five, to order that the Consideration of the Report, (made on the said Charles, last Lord Baltimore's said Petition) and of the said Petitions, should be adjourned unto the End of Michaelmas Term then next, that the said John, Thomas and Richard Penn, might have an Opportunity to proceed in a Court of Equity to obtain Relief, upon the said Articles of Agreement insisted on by them, according as they should be advised, and that after the Expiration of the said Time, either Party should be at Liberty to apply to the Committee of Council for Plantation Affairs, as the nature of the Case might require; Or to some such or the like Effect, as by the said last mentioned Order in Council, relation being thereunto had, may appear. AND WHEREAS, the said John Penn, Thomas Penn and Richard Penn, in Pursuance of the said last mentioned Order in Council, on or about the twenty-first day of June, one thousand seven hundred and thirty-five, exhibited their Original Bill of Complaint into his Majesty's high Court of Chancery in Great Britain, against the said Charles, last Lord Baltimore, as Defendant thereto; Which Bill was afterwards amended, and Sundry Bills of Revivor and Supplemental Bills were afterwards filed from time to time in the said Cause,

upon the decease of the said John Penn, and as other Occasions required, by which several of the Children of the said Richard Penn, and the Executors in Great Britain of the said John Penn, deceased, were additionally made Co-Plaintiffs. And also his Majesty's Attorney General and sundry other Persons, were additionally made other Partys, Defendant thereto. BY WHICH said Bill, the Plaintiffs in the said Cause Prayed (amongst other matters,) that they might be quietted in the Possession of the said Three Lower Countys; And that the said Defendant, Charles, last Lord Baltimore, might be Decreed to Desist from giving them any further Trouble or Molestation, by renewing his old and often Overruled Claims in the said Bill mentioned, and that the said therein recited Articles of Agreement, of the tenth of May, one thousand seven hundred and thirty-two, might be Decreed and declared to exist and subsist, and to be in full force and virtue, and might be decreed to be forthwith specifically Performed, and to be carried into full force and Execution in all Points and Respects whatever. And that all Necessary and Proper Directions might be given in order thereto. And that the Pretended Doubts set forth and mentioned in the said Bill, as to the fixing a Centre for the Circle round the Town of Newcastle. And as to the Dimensions of the said Circle or Distance from the said Town, at which it was to be markt out, and any other Doubt or Pretended Difficulty that the Defendant, the said Charles, last Lord Baltimore, had, or Pretended to have, relating to the said Articles of Agreement, or any thing therein contained, or the Execution and Performance of the same, might be removed and cleared up by the Authority and Decree of the Court. And that the said Defendant might then instantly, and might again, after the said Lines and Bounds should be run, markt and laid out, in a more certain and Particular Manner, Pursuant to his Covenants and Agreements in the said recited Articles of Agreement contained, make further and better Assurances and conveyances to the Plaintiffs, their Heirs and Assigns, of the said Province of Pensilvania, and of the said Three Lower Countys, to be bounded according to the intent and Meaning of the said Articles of Agreement, And of all his Right, Interest, Pretensions, Claim and Demand in and to the same. And that the said Defendant might be Decreed to Pay the Plaintiffs all the Costs and Expences of their Commissioners, and otherwise relating to the Executing the said Agreement of May, one thousand seven hundred and thirty-two, and likewise all the Costs which the Plaintiffs had been any way put to, by reason of the Breach and Non-performance on the Part of the Defendant of the said Articles of Agreement, and by Reason of the said Petition of the said Defendant, Presented to his Majesty on the said eighth of August, one thousand seven hundred and thirty-four. And that the Plaintiffs might have all such further and other Relief in the Premises, and in such other manner as should be consistent with Justice and Equity, or to some such or the like Effect. AND WHEREAS, the said Charles, late Lord Baltimore, put in his Answer or Answers to the said Bill or Bills, and thereby (amongst other things) insisted on Fraud and Imposi-



tion in obtaining the said Articles of Agreement, and that the said Articles were absolutely void, and were a voluntary Agreement, and without any manner of Consideration given him for entering into the same, and therefore said that he hoped the Plaintiffs should not have any such Relief as was prayed by their Bill against him, and that the said Articles should not be carried into Execution by the Aid, Assistance, or direction of the said Court in any respect whatsoever, but should be delivered up to him to be cancelled, and that the Plaintiffs should be decreed to Pay his Costs and Expences, or to some such or the like Effect. AND WHEREAS the said Cause was carried on in an adversary Manner and at great Expence, and being regularly at Issue, great Numbers of Witnesses were duly examined therein on each side, both in America and in Great Britain. After which the said Cause came on to be heard, and was heard, before The Right Honourable the Lord High Chancellor of Great Britain, in Presence of Council learned for all Partys, on or about the third, fourth, seventh, eighth, ninth, eleventh, and fifteenth days of May, one thousand seven hundred and fifty, and upon the said fifteenth day of May, one thousand seven hundred and fifty, the said Lord Chancellor pronounced a Decree in the said Cause, in the Words or to the Effect following, that is to say, (The Lord Chancellor's decree is quoted in appendix D of this publication.) AND the said Decree hath since been duly Signed and Enrolled, As by the Bills, Answers, and other Proceedings in the said Cause, and the Examinations of the Witnesses therein, and the said Decree, and the Enrolment thereof, duly filed and remaining as of Record in the said Court of Chancery, Relation being thereunto severally and respectively had, may more fully and at large appear. AND WHEREAS, after Pronouncing the said Decree, the said Charles, late Lord Baltimore, submitted thereto, and to the Performance of the same. AND in Obedience to and part performance of the same, Commissions were respectively Executed by the said Charles, late Lord Baltimore, under his Hand and Seal, on his Part, and by the said Thomas Penn and Richard Penn, under their Hands and Seals, on their Part, Authorizing sundry Persons as their respective Commissioners, to carry the said Articles of Agreement and Decree into Execution, and to run and mark out the Lines, part of a Circle and Boundaries so agreed and Decreed. AND the Commissioners proceeded therein; BUT in the Course of such their proceedings, sundry other Objections were raised in America, to some Part of the said Work by the Commissioners, on the Part of the said Charles, late Lord Baltimore. WHEREUPON, the said Thomas Penn, and Richard Penn, on or about the sixteenth day of March, one thousand seven hundred and fifty, Presented their humble Petition to the said Lord high Chancellor of Great Britain (Pursuant to the Reservation contained in the said Enrolled Decree,) humbly setting forth the New Objections which had been so made as aforesaid, and Praying (amongst other Things,) that it might be declared that the Circle round the Town of Newcastle ought to be at twelve miles distance from the Centre, according to Horizontal and

not superficial Measure, and that the fifteen Miles due South of the Southernmost Part of the City of Philadelphia, ought to be computed according to the like Measure, or to some such or the like Effect. AND the said Petition came on to be heard before the said Lord high Chancellor, on or about the twenty-seventh and twenty-ninth days of the same Month of March, but in the year one thousand seven hundred and fifty-one, in Presence of Counsel for the said Plaintiffs, and for the said Charles, late Lord Baltimore, and the said Lord high Chancellor, on the said twenty-ninth day of March, on thousand seven hundred and fifty-one, made an Order upon the said Petition to the Effect following, that is to say, His Lordship Declared that the part of a Circle mentioned in the said Decree to be drawn round the Town of Newcastle, ought to be at twelve Miles distance from the Centre, according to horizontal, and not superficial Measure, and that the fifteen Miles due South of the Southernmost Part of the City of Philadelphia, ought to be computed according to the like measure. And did Order that the Commissioners appointed on both sides, should observe that Rule in carrying the said Decree into Execution, and reserved the Consideration of the costs of that Application in like manner as the Costs subsequent to the Hearing were reserved by the said Decree, or to some such or the like Effect, as by the said last mentioned Order, Relation being thereunto had, may appear. AND WHEREAS, the said Charles, late Lord Baltimore, departed this Life in Great Britain, on or about the twenty-third day of April, one thousand seven hundred and fifty one, leaving the said Frederick, Lord Baltimore, his only Son and Heir, then an Infant, and having after the time of pronouncing the said Decree, duly made and executed his last Will and Testament, in Writing, which was attested by three Witnesses, and bears date on or about the seventeenth day of November, one thousand seven hundred and fifty, and having thereby devised his Real Estate and therein mentioned. And after payment of his Debts, Legacys, Funeral Charges, and the Charges of his Executors, devised the residue of his Personal Estate to his said Son, as by the said last Will and Testament, which was soon after the said Testator's decease duly proved by some of the Executors therein named, in common Form, in the Prerogative Court of the Archbishop of Canterbury, Relation being thereunto had, may more fully and at large appear. AND WHEREAS, the Commissioners so decreed to be authorized and appointed, and who were so authorized and appointed by the said Charles, late Lord Baltimore, and by the said Thomas Penn and Richard Penn, severally and respectively as aforesaid, proceeded in America towards the Execution of the said Agreement and Decree, especially in such Parts thereof if which no Difficultys had been before raised. AND more particularly, the said Commissioners on each side, or Quorums of them respectively, upon and before the twenty-sixth day of April, one thousand seven hundred and fifty-one, duly Signed a Minute or Instrument in Writing, declaring it to have been agreed by them; FIRST, That a due West Line should be run, measured, layed out, and marked

by Visible Stones, Trees, Buildings or Landmarks, to begin at a Point on the Verge of the Main Ocean, (being at the distance of one hundred and thirty-nine Perches due East from a Stone fixed by the said Commissioners on the Northern part of the Land called Fenwick's Island, near the Four Mulberry Trees there growing,) across the Peninsula to the Bay of Chesopeak, Which fixed Stone was marked on the side thereof turned to the South, with the Arms of the Lord Baltimore, and on the other side thereof turned to the North, with the Arms of the said Thomas Penn and Richard Penn; and SECONDLY, That the said Point and Place of beginning, should be esteemed, taken for, and agreed to be the Place where the Cape, called in the Articles of Agreement between their several Constituents, Cape Henlopen, was situated, and that the said Line, when so layed out, should be esteemed, taken for, and be the East and West Line, which the said Commissioners were directed and empowered to draw across the said Peninsula, by virtue of their several Commissions, according to the third Article of the said Agreement, from the Middle whereof a Tangent Line was to be drawn to the Western Part of the Periphery of a Circle, at twelve Miles distance from the Town of Newcastle, Subject, nevertheless, to the Alteration or Confirmaton by the Right Honourable the Lord high Chancellor of Great Britain, or the Joint Order or Directions of their Constituents, or to some such or the like Effect. AND WHEREAS, the said Commissioners and their Surveyors in consequence of such their Agreement, began, in their own Persons, to Perform and execute the same, and fixed a Meridian Line to their Satisfaction, and measured, or caused to be measured and marked out the said East and West Line, due West from the said Point or Place of Beginning, on the Verge of the Main Ocean, and found the extent of the said West Line from the Verge of the Ocean on the East Part, as far as to a certain Place or Water, called Slaughter's Creek, on the West Part, (at which Place or Water, the said Charles, late Lord Baltimore's said Commissioners insisted the said Line should stop,) amounted to sixty-six Miles and two hundred and forty-eight Perches and an half; But that when such Line was continued on farther West, quite to the Verge of the East side of the Chesopeak Bay, (To which Bay, the Commissioners of the said Thomas Penn and Richard Penn, insisted the said Line ought to run and extend,) the same amounted to sixty-nine Miles and two hundred and ninety-eight Perches, as by the said Commissioners and the Surveyors' Journals and Minutes approved of, and signed by the said respective Commissioners, Relation being thereunto had, may more fully and at large appear. AND WHEREAS, the said East and West Line, when extended West to the verge of the Bay of Chesopeak, runs thro' Taylor's Island, and thro' a small part of James's Island, at near the Southern End of the said James's Island. AND WHEREAS, the measuring and marking out the said East and West Line, was a Work attended with a large and heavy Expence to the Partys, and altho' some part of the said Work was carried on by the Commissioners and Surveyors in America, after the day of the decease of the said Charles,

late Lord Baltimore, in Great Britain; Yet the same was bona fide carried on and finished, long before the respective Commissioners in America received any Information there of the death of the said Charles, late Lord Baltimore. AND the consequence of extending the said Line West to the said Bay of Chesopeak is, that according to the said articles of Agreement and Decree, the said Tangent Line to be drawn up the said Peninsula, and to make a Tangent to the Western part of the Periphery of the said Circle, at twelve Miles distance from the Town of Newcastle, is to begin at the middle of the said East and West Line, (that is to say,) at the distance of thirty-four of the said miles and three hundred and nine Perches, from the said point or place of beginning of the said East and West Line, at the said East end of the same East and West Line. AND WHEREAS, the said Thomas Penn and Richard Penn, together with sundry of their children, and the Executors in Great Britain of their deceased Brother, the said John Penn, on or about the eighth day of November on thousand seven hundred and fifty-four, Exhibited into the said Court of Chancery their Bill of Revivor and Supplemental Bill of Complaint against the said Frederick, Lord Baltimore, and sundry other persons therein named, as partys Defendants thereto, and thereby stated the Proceedings and the said Decree, and subsequent Order which had been obtained in the said former cause against the said Charles, late Lord Baltimore, and also the proceedings of the said Commissioners in America, and the new Question which was made by the Commissioners of the said Charles, late Lord Baltimore, whether the said East and West Line should extend West across the said Peninsula, quite Home to the Bay of Chesopeak, or should stop short thereof at the said other place or Water called Slaughter's Creek, and also the Will and death of the said Charles, late Lord Baltimore, and many other matters. AND thereby prayed, (amongst other Things,) That the said former suit, the said Enrolled Decree and subsequent Order, and all other the proceedings therein, which abated by the death of the said Charles, late Lord Baltimore, might stand and be revived in full force against and be fully, completely, and in every part thereof obeyed, performed and executed in all respects, by all and every one of the then Defendants, or by such and so many of them as had received, or did claim, or should appear to have any Estate, Right, Title, Trust, Claim, Demand or Interest in or to the said Province of Maryland, or any part thereof, and that all and every one of the said Defendants might, by the Order and Authority of the said Court be decreed to obey, perform and Execute the said Decree, and every part of the same; And that the said then Defendants might show cause, (if any they had,) why the said Decree and proceedings should not be revived, and might answer the supplemental matters contained in the said Bill, and that the matter whether the said East and West Line should stop at its Western End at Chesopeak Bay, or at any and what particular place short of the said Bay, might be settled by the Judgment of the said Court of Chancery, and for a discovery of all settlements or pretended settlements, or agreements to



settle the said Province of Maryland, or any part thereof, and for further Relief, Or to some such or the like Effect. AND WHEREAS, the Plaintiffs in the said Cause, on or about the twenty-first day of November one thousand seven hundred and fifty-four, obtained an Order of the said Court to revive the said former suit and proceedings against the said Frederick, Lord Baltimore. AND WHEREAS, the said Frederick, Lord Baltimore, on or about the twenty-second day of March one thousand seven hundred and fifty-five, put in his plea to part and answer to other part of the said Bill of Revivor and Supplemental Bill. AND by such his plea insisted on certain settlements, said to be made, of the said Province of Maryland, by Indentures of Lease and Release of the thirtieth and thirty-first days of December, in the Year of our Lord one thousand six hundred and ninety-eight, and by other Indentures of Lease and Release, of the tenth and eleventh days of July, in the Year of our Lord one thousand seven hundred and thirty, and that he the said Frederick, Lord Baltimore, by virtue of and under the said settlements, or one of them, was seized to him and the Heirs Male of his Body, of the province of Maryland, which he pleaded in Bar to the Relief sought by the said last mentioned Bill, and insisted that his Right and Interest in and to the said Provinces of Maryland and Pensilvania, and the three Lower Countys, or any of them, ought not to be bound or affected by the Articles of Agreement in the Bill, mentioned to have been executed by his Father, or to some such or the like effect, As by the said last mentioned Bill, Order of Revivor, and Plea and Answer remaining, filed and as of Record in the said Court of Chancery, Relation being unto the same respectively had, may more fully and at large appear. AND WHEREAS, the said Plea was set down and came on to be in part argued before the Right Honourable the Lord High Chancellor of Great Britain, on or about the seventh day of May, one thousand seven hundred and fifty-five. BUT the said Plea was not fully argued or determined, and the Counsel for the said Frederick, Lord Baltimore, then agreed to deliver over Copys of the several Family Settlements and Agreements to Settle, made of the said Province of Maryland, by the said Frederick, Lord Baltimore, and his Ancestors, in order to shew to the Plaintiffs that the said Frederick, Lord Baltimore, was not bound by the said Articles of Agreement so entered into by his said Father, or by the said Decree or subsequent Order so obtained against his said Father as aforesaid, or by any of them. AND ACCORDINGLY, the Agent of the said Frederick, Lord Baltimore, did deliver over unto the Agent of the said Thomas Penn and Richard Penn Copys of one settlement of the said Province of Maryland, bearing date on or about the said thirty-first day of December, one thousand six hundred and ninety-eight, and made and executed by way of Lease and Release, by Charles, late Lord Baltimore, the Elder, (late Great Grandfather of the said Frederick, Lord Baltimore,) and by Benedict Calvert, then son and Heir apparent of the same Charles, late Lord Baltimore the Elder, and of another settlement of the said Province of Maryland, bearing date on or about the said elev-

enth day of July, one thousand seven hundred and thirty, and made and executed by way of Lease and Release, by Charles, late Lord Baltimore, (the late Father of the said Frederick, Lord Baltimore,) and of a certain Indenture of Covenants and Agreements relating to the said Province of Maryland, bearing date on or about the ninth day of March, one thousand seven hundred and fifty-three, and entered into and executed by the said Frederick, Lord Baltimore, and the Honourable Cecilius Calvert, Esquire, his Uncle. AND WHEREAS, the said Thomas Penn and Richard Penn, and other the Plaintiffs last mentioned, after that they and their Council had considered the said Deeds as delivered over, Upon Motion made to the said Court of Chancery, did obtain a certain Order of the same Court, bearing date on or about the sixteenth day of the said Month of May, one thousand seven hundred and fifty-five, that the Plaintiffs might be at Liberty to amend their said Bill as they should be advised, on payment of twenty shillings costs, and paid the said costs. AND on or about the sixth day of September, one thousand seven hundred and fifty-five, exhibited and filed in the said Court of Chancery a new Engrossment of their amended Bill of Revivor and supplemental Bill of Complaint, against the said Frederick, Lord Baltimore, and several other Persons as Parties named for Defendants thereto, and thereby charged and put in Issue, as well the several last mentioned Proceedings of the said Commissioners in America, as the said Will and death of the said Charles, late Lord Baltimore, (Father of the said Frederick, Lord Baltimore,) and the said several Family settlements and Indenture of Covenants and Agreements relating to the said Province of Maryland, (Copys whereof had been so delivered over as aforesaid,) and insisted that the said Frederick, Lord Baltimore, was bound by and ought to Perform the said Articles of agreement of the tenth of May, one thousand seven hundred and thirty-two, and the said Enrolled Decree of the fifteenth day of May, one thousand seven hundred and fifty, and the said subsequent Order of the twenty-ninth of March, one thousand seven hundred and fifty-one and also insisted on the Validity of the said Commissioners last mentioned Proceedings, and prayed (amongst other Things,) That the said former suit, Enrolled Decree and subsequent Order, and all other the Proceedings therein, which abated by the Death of the said Charles, late Lord Baltimore, might stand and be revived in full force against, and be fully, compleatly and in every Part thereof obeyed, performed, and executed in all respects by all and every one of the then Defendants, or by such and so many of them as had received, or did claim, or should appear to have any Estate, Right, Title, Trust, Claim, Demand or Interest, in or to the said Province of Maryland, or any part thereof, and that all and every on of the then Defendants might, by the Order and Authority of the said Court, be decreed to obey, perform, and execute the said Decree and every part of the same. And if the Court should not think proper to Decree the Defendants specifically to execute and perform the said Articles of Agreement, and every thing relating thereto, that then the Plaintiffs might have a

Decree for a Discovery and Account of the Real and Personal Assets of the said Charles, last Lord Baltimore, and that the same might be paid to or secured for the Plaintiffs, as well for paying their Costs decreed them as aforesaid, as also for and towards making them a satisfaction for the very great Damages they had already incurred, and for the much greater damages they might thereafter sustain, by the Breach and Non-Execution, and Non-Performance of the said Articles of Agreement of the tenth of May, one thousand seven hundred and thirty-two, or any way relating thereto. And that the said Enrolled Decree and subsequent Order might be Ordered and Decreed to be obeyed, Performed and Executed in all Points, by all and every of the then Defendants, or by such and so many of them as ought to Perform and obey the same, and by their respective Issues, and by all Persons claiming or to claim, by, from, or under them, and every or any of them, and that the Plaintiffs and Proprietaries of Pensilvania might have the Decree and Perpetual Injunction of the Court to hold and Enjoy to them and their Heirs forever, the said Territories and Lands so released by the said Charles, the last Lord Baltimore as aforesaid, by the said Articles of Agreement of May, one thousand seven hundred and thirty-two, as against the Defendants, Frederick, Lord Baltimore, Louisa Calvert and Cecilius Calvert, and their Heirs, Assigns, and respective Issues, and against all Persons claiming or to claim, by, from, thro', under, or In Trust for them or any of them, and that the costs which by the said Decree were Decreed to be paid by the said Charles, Lord Baltimore, and those which by the said Decree and by the said subsequent Order were reserved for the future consideration of the Court, might all be Decreed to be paid by the Defendants, or by such of them as the same might concern, and that the pretended Doubt and Question touching the Extent Westward of the said East and West Line to run cross the said Peninsula, might be cleared up and determined by the authority of the Court, and for the further and other Relief, or to some such or the like Effect, as by the said last mentioned amended Bill of Revivor and supplemental Bill remaining duly filed, and as of Record in the said Court of Chancery, Relation being thereunto had, may more fully and at large appear. AND WHEREAS, the parties to these Presents have come to an amicable Agreement in manner as hereinafter mentioned. NOW THIS INDENTURE WITNESSETH, That for the putting a final and perpetual End for ever to all disputes and differences between the Parties to these Presents, relating to the Extent, Bounds and Limits of the said Province of Maryland, Province of Pensilvania, and the Three Lower Countys of Newcastle, Kent and Sussex on Delaware, in America, and to every or to any of them, and in order that the same Provinces and Countys may respectively be peaceably Possessed and quietly governed by the respective Proprietarys, and that the Busines of the Settlement and Improvement of the same may be carried by the respective Proprietaries without further Interruption, and to as great a degree as may be done, and for the putting and end to that Excessive Expence which

the partys on both sides and their respective Ancestors have long sustained, during the said Contests. The SAID Frederick, Lord Baltimore, for himself and his Heirs, Executors, Administrators and Assigns, and for each and every of them, doth acknowledge, testify and declare, and doth also Covenant, Promise, Grant and Agree to, and with the said Thomas Penn and Richard Penn, and their several and respective Heirs, Executors, Administrators and Assigns, and to and with each and every of them, by these Presents in manner and form following, (that is to say,) THAT the Commissioners who had been last so respectively appointed by the said Charles, last Lord Baltimore, on his Part, and by the said Thomas Penn and Richard Penn on their Part, as is hereinbefore mentioned or recited, did duly proceed in the Execution of such Commissions, and did justly agree upon, fix and determine the true spot or point, or Place for Beginning, from whence to Measure the due West Line across the said Peninsula, which was agreed and directed by the said Articles of Agreement and Enrolled Decree. THAT the said spot or point, or place for beginning such due West Line, was and is, and shall at all times for ever hereafter, be established, held, taken and adjudged to be, where the said Commissioners so agreed upon, fixed and determined the same to be, named at a Point on the Verge of the Main Ocean, being at the distance of one hundred and thirty-nine perches due East, from a stone fixed by the said Commissioners on the Northern Part of the Land called Fenwick's Island, near to Four Mulberry Trees there growing, which stone was marked on the side thereof turned to the South, with the Arms of the said Charles, last Lord Baltimore, and on the side thereof turned to the North, with the Arms of the said Thomas Penn and Richard Penn. THAT the said spot or point, or place of beginning such due West Line, was and is, and shall at all times forever hereafter be esteemed, held, taken and adjudged to be the Point of the Cape Hinlopen, mentioned in the said Articles of Agreement of the tenth day of May, one thousand seven hundred and thirty-two, at which the East and West Line across the said Peninsula mentioned in the same Articles, was meant and intended to begin. THAT the said Commissioners and their Surveyors did, in due Manner, rightly fix and settle the true Meridian Line, and did then Proceed justly, according to the said Articles and Decree, and their respective Commissions, and did Measure a true West Line, (from the said spot or Point or place of beginning at the East End thereof,) quite across the said whole Peninsula to the Verge on the Eastern side of the said Bay of Chesapeake at the West End thereof,) in exact Pursuance of the Compliance with the said recited Articles of Agreement and Decree, and the true intent and meaning of the same. THAT the said Commissioners did find and agree that the said West Line measured quite across the said whole Peninsula, to the Length or Extent of sixty-nine Miles and two hundred and ninety-eight Perches. THAT the true Length and Extent of the said West Line was and is, and shall at all Times for ever hereafter be esteemed, held, taken and adjudged to be sixty-nine Miles and two hundred and ninety-eight Perches, and neither more



nor less. THAT consequently, the exact middle of such West Line, (from whence the other Line is to begin, which is to run up the said Peninsula till it makes a Tangent, to the Western Part of the Periphery of the said Part of a Circle, at the distance of Twelve English Statute Miles horizontally, measured from the Court House in the said Town of Newcastle,) was and is, and shall at all times forever hereafter be esteemd, held, taken and adjudged to be, at the exact distance of Thirty-four of the said Miles and three hundred and nine Perches so measured, West from the aforesaid Spot or Point, or Place of beginning of the said West Line, as the same were so measured as aforesaid. THAT as the said exact middle of the said Western Line (as now fixed and forever agreed,) will be a very material Bound or Corner mark between the Parties to these Presents two different ways, So in addition to or rather in ascertainment of that Part of the said former Agreement, there shall be at the Joint Expense of the said respective Proprietarys, Partys hereto, and their Heirs, one or more large and remarkable stones erected and setup, and continued for ever there, according to the angle made by the said due West Line, and by the said Tangent Line for dividing the said Peninsula, which stone or stones on the outward sides of the same, facing towards the West and towards the South, shall have the Arms of the said Frederick, Lord Baltimore, graved thereon, and on the inward sides of the same, facing towards the East and towards the North, shall have the Arms of the said Thomas Penn and Richard Penn graved thereon. THAT the said Frederick, Lord Baltimore, and his Heirs and Assigns shall, within the space of thirty days from the date of these Presents, Prepare, execute and issue, under his and their Hands and Seals, one or more Commissions, appointing seven impartial and proper Persons, or any number of them, not less than three, as Commissioners on his and their Parts, to mark, run out, settle, fix and determine all such Parts of the said Circle, Lines, Marks and Boundaries as are not yet compleated, and to carry the said former Articles of Agreement, Decree and subsequent Order, and the Agreement in these Presents contained, into full and compleat Execution, in all respects whatsoever, agreeable to the Plain Intent and true meaning of the same former Articles, Decree and Order, and of these Presents. THAT such Commissioners shall proceed to execute such Commissions with all fairness and Despatch. THAT neither the said Frederick, Lord Baltimore, nor his Heirs, Executors or Administrators, nor any of them, shall at any Time or Times hereafter, be consenting to, aiding, or assisting in, or incourage or promote in any manner whatsoever, or lend his or their, or any of their Name or Names towards the commencing, prosecuting or defending any suit or suits, cause or causes whatsoever, to be commenced, prosecuted or defended in any Court of Law or Equity whatsoever, by any of the Tenants of the said Frederick, Lord Baltimore, or by any of his Grantees, or the Grantees of any of his Ancestors, whereby the Right of the said Thomas Penn and Richard Penn, their Heirs and Assigns, to the said Province of Pensilvania in America, with all and singular the Rights, Loyalties, Members

and Appurtenances thereof, and all those Territories and Tracts of Land now called, or known by the name or names of the Three Lower Counties of Newcastle, Kent and Sussex, upon Delaware, in America, with all and singular their and each of their Rights, Royalties, Members and Appurtenances. The said Province and Counties bounded and to be bounded according to the Extent, Bounds and Limits which were agreed by the said Articles of the tenth of May, one thousand seven hundred and thirty-two, and decreed and ordered in and by the said inrolled Decree of the Court of Chancery, and the said subsequent Order of the said Court of the twenty-ninth day of May, one thousand and seven hundred and fity-one, and according to the true intent and meaning of these Presents, May be drawn in question or controverted in any matter whatsoever. THAT the said Frederick, Lord Baltimore, and his Heirs and Assigns, shall and will, on his and their Parts, at all Times, on Request, and at the Costs and Charges of the said Thomas Penn and Richard Penn, their Heirs and Assigns, make do, perform, and execute any further Matter and Thing (exclusive of the Acts hereby stipulated and intended to be Performed at a joint Expence,) which shall any way be necessary to be done, for rendering the said former Articles of Agreement, Decree and subsequent Order, and these presents, most perfect, valid, Sure and effectual, at all Times for ever hereafter. THAT the said Frederick, Lord Baltimore, shall and will, within three days after the Execution of these Presents, in his own proper person, duly acknowledge his Execution of this present Indenture, and his Consent that the same may be Enrolled before one of the Masters of the said Court of Chancery, to the intent that the same may be enrolled in the said Court. THAT the said Frederick, Lord Baltimore, shall and will, within thirty days next after that a Bill shall be filed by the said Thomas Penn and Richard Penn or their Heirs, against the said Frederick, Lord Baltimore, in the said Court of Chancery, for carrying the said Matters and Things contained in these Presents into Execution, duly put in his Answer thereto, and in such Answer shall and will admit all such matters as are herein by him admitted, and particularly that he, the said Frederick, Lord Baltimore, and all Persons claiming or to claim the said Province of Maryland, by, thro', from or under him, shall be bound to obey and perform the said former Articles of Agreement, and the said Enrolled Decree and subsequent Order of the said Court of Chancery, and also the said Proceedings of the said Commissioners, in and about the said spot or point, or place of beginning of the said West Line, and in and about the said Meridian Line, and in and about the running and measuring the said Line due West across the said Peninsula, and in and about the true Length and Extent of the said West Line as aforesaid, and that such Bill and answer shall be settled with the approbation of Council on both sides. THAT neither in such answer or at any other Time, or in any other Manner, shall the said Frederick, Lord Baltimore, his Heirs or Assigns, or any his or their Council or Agents, demand or Pray any Costs to be decreed or Ordered to him or them in

Respect of the said present suit now depending. But the said present suit and all proceedings therein shall be forthwith dismissed, upon a proper application to be forthwith made by the said Frederick, Lord Baltimore, to the Court of Chancery, as for want of Prosecution. THAT upon Request made to the said Frederick, Lord Baltimore, or his Clerk in Court or Solicitor, after such Answer shall be put in, the said Frederick, Lord Baltimore, or his Clerk in Court, shall instantly sign or otherwise give a full Consent, for setting the said Cause down to be heard before the Lord Chancellor or Lord Keeper of the Great Seal of Great Britain, upon Bill and upon such Answer. THAT the said Frederick, Lord Baltimore, shall by his Council appear gratis, to hear the said Cause at such Time as shall be appointed for the same, without being served with a subpoena for that purpose. THAT at such hearing, and on other necessary Occasions, the said Frederick, Lord Baltimore, and his Heirs and Assigns, and his and their Council and Agents on his and their parts, shall and will Consent and agree that a Decree be pronounced against him, and them agreeable in all respects to the true intent and meaning of these Presents, and of the Partys hereto, as the same are mentioned and expressed in these Presents; and further, that Liberty be therein reserved for either Party to apply to the Court for further Directions as they shall be advised, and to Pray no Costs to the time of the hearing, and to Consent that the subsequent Costs be reserved. THAT the said Frederick, Lord Baltimore, his Heirs or Assigns, shall not at any Time or in any manner whatsoever, oppose such Decree as shall be so made in the said Cause, Pursuant to the true intent and meaning of these Presents, or the signing and Enrolling such Decree. AND THAT in case the said Thomas Penn and Richard Penn, or their Heirs or Assigns, shall at any Time hereafter, (whether before or after the said Cause in Chancery shall be heard,) be desirous to lay this Present Indenture and the matters hereinbefore mentioned, or any of them, by an humble Petition before his Majesty, his Heirs or Successors, in his or their Privy Council, and humbly to pray the Royal Allowance, Ratification and Confirmation of the said former Articles of Agreement, and the said Enrolled Decree and subsequent Order of the said Court of Chancery, and of these Presents, to be forever established as between the respective Proprietarys of the said Provinces and Counties for the Peace and Welfare of the same, and of his Majestys subjects in those Parts, The said Frederick, Lord Baltimore, his Heirs and Assigns shall forthwith, upon request, join in and become a Co-Petitioner or Co-Petitioners therein, or otherwise, with his and their own hands, sign a full Consent to such Petition at the foot thereof, and shall and will, by all other fitting and Proper means, give his and their full Consent and agreement to the same, either in his and their own proper Persons, or by such other means as shall be most valid and effectual. AND WHEREAS, the said Thomas Penn and Richard Penn, and their Ancestors and Predecessors, by themselves, or by some of their Tenants, Grantees or Agents, under their Right and Title, have been from Time to Time and now are in

the actual Possession of all the Lands, Tenements and Hereditaments hereinafter mentioned to be hereby released by the said Frederick, Lord Baltimore, unto the said Thomas Penn and Richard Penn and their Heirs.

NOW THEREFORE, THIS INDENTURE FURTHER WITNESSETH, That for the Ends and Purposes, and from the motives aforesaid, and in order to render these Presents the most valid that may possibly be, and for and in Consideration of five shillings of lawful money of Great Britain to the said Frederick, Lord Baltimore, in hand paid, by the said Thomas Penn and Richard Penn, at or before the sealing and delivery of these Presents, the Receipt whereof is hereby acknowledged, HE, the said Frederick, Lord Baltimore, for himself and his Heirs, HATH released, renounced and quitted Claim, and by these Presents DOTH fully and absolutely release, renounce, and quit claim unto the said Thomas Penn and Richard Penn, and to their Heirs and Assigns forever, ALL that the said Province of Pensilvania, in America, with all the singular the Rights, Royalties, Members and Appurtenances thereof; AND ALL those Territories and Tracts of Land now called or known by the name or names of the Three Lower Countys of Newcastle, Kent and Sussex, upon Delaware, in America, with all and singular their and each and every of their Rights, Royalties, Members and Appurtenances. The said Province and Countys bounded and to be bounded according to the Extent, Bounds and Limits, which were agreed by the said Articles of Agreement of the tenth day of May one thousand seven hundred and thirty-two, and Decreed and Ordered in and by the said Enrolled Decree of the said Court of Chancery, and the said subsequent Order of the said Court of the twenty-ninth day of March one thousand seven hundred and fifty-one, and according to the true intent and meaning of these Presents, and the Reversion and Reversions, Remainder and Remainders, Yearly and other Rents, Issues and Profits, and Arrears of Rents, Issues and Profits, of all and singular the said Province of Pensilvania and three Lower Counties of Newcastle, Kent and Sussex, and of each and every of the same, and all the Estate, Right, Title, Interest, Property, Power, Prerogative, Claim, Demand and Pretensions whatsoever of the said Frederick, Lord Baltimore, and his Heirs, of, in, and to the same, and every or any part or parts of the same. PROVIDED ALWAYS, and it is hereby declared and agreed, by and between the said Partys to these Presents, and it is the true intent and meaning of them and of these Presents, That neither these Presents, nor any Clause, Article, Matter or Thing whatsoever therein contained shall extend, or be deemed, construed, or taken to extend to the right of any Grantee or Grantees, and those claiming under them, to any the Farms, Lands, Tenements or Hereditaments, now in the actual possession and occupation of all and every, or any the Tenants or Occupiers of the said Province, Lands, Hereditaments and Premises hereby released, or intended, or agreed to be hereby released, as aforesaid, Which have been at any time and in any Way or Manner heretofore granted, by or under the authority of the said Frederick, Lord Baltimore, or by or under the authority of



any of the Ancestors of him, the said Frederick, Lord Baltimore. But that it shall and may be lawful to and for all and every such Tenants and Occupiers of the same Premises and every part thereof, their and every of their Heirs, Executors, Administrators and Assigns, from Time to Time, and all times hereafter; TO HOLD AND ENJOY their said Farms, Lands, Tenements and Hereditaments, and every of them, and every part thereof, for and during all and every such their several and respective Estates, Terms and Interests in the same, and every of them, and every part thereof, subject, nevertheless, to and by, and under all and every the same Quit-Rents, Reservations and Services to be from henceforth payed, rendered and performed to the Proprietarys of the said Province of Pensilvania for the Time being, as they the said Tenants and Occupiers and every of them were lyable at the Time, of and immediately before the Execution of these Presents, to have paid, rendered and performed to the Proprietary of the said Province of Maryland, any thing hereinbefore contained, to the contrary in any wise notwithstanding. PROVIDED ALSO, and it is hereby further declared and agreed by and between the said Parties to these Presents, and it is the true intent and meaning of them and of these Presents, That neither these Presents, nor any Clause, Article, Matter or Thing whatsoever therein contained, shall extend or be deemed, construed or taken to extend to the Right of any Grantee or Grantees, and those claiming under them, to any the Farms, Lands, Tenements or Hereditaments, which are situate, lying and being on the West side of the River Susquehanna, and within the space or distance of one Quarter of a Mile more North than the East and West Line mentioned in the sixth article of the said Articles of Agreement of the tenth day of May one thousand seven hundred and thirty-two, and which have been at any Time and in any Manner heretofore granted, by or under the authority of the said Frederick, Lord Baltimore, or by or under the authority of any of the Ancestors of him, the said Frederick, Lord Baltimore, and are now in the actual Possession or Occupation of All, every, or any the Tenants or Occupiers of the said Province, Lands, Hereditaments and Premises; Nor to the Estate, Right, Title, or Interest of such Tenants or Occupiers, or any of them, in or to the said Lands and Premises last mentioned, or any Part thereof. But that it shall and may be lawful, to and for all and every such Tenants and Occupiers of the said last mentioned Lands and Premises and every Part thereof, their and every of their Heirs, Executors, Administrators and Assigns, from Time to Time, and at all Times hereafter, TO HOLD AND ENJOY their said Farms, Lands, Tenements and Hereditaments, and every of them, and every part thereof, for and during all and every their several and respective Estates, Terms and Interests in the same, and every of them, and every part thereof, subject, nevertheless, to and by, and nder all and every the same Quit-Rents, Reservations and Services to be from henceforth paid, rendered and performed to the Proprietarys of the said Province of Pensilvania for the Time being, as They the said Tenants and Occupiers, and every of them, were lyable at

the time of and immediately before the Execution of these Presents, to have paid, rendered and performed to the Proprietary of the said Province of Maryland, any thing hereinbefore contained to the contrary in any wise notwithstanding. AND THIS INDENTURE ALSO WITNESSETH, That for putting a final and perpetual End forever to all Disputes and Differences between the parties to these Presents, relating to the Extent, Bounds and Limits of the said Province of Maryland, Province of Pensilvania, and the Three Lower Countys of Newcastle, Kent and Sussex, on Delaware, in America, and to every or to any of them; and in order that the same Provinces and Countys may respectively be peaceably possessed and quietly governed by the respective Proprietarys, and the Business of the Settlement and Improvement of the same may be carried on by the respective Proprietarys without further Interruption, and to as great a Degree as may be done, and for the putting an End to that excessive Expence which the Partys on both sides and their respective Ancestors have long sustained during the said Contests. THE SAID Thomas Penn for himself and his Heirs, Executors, Administrators and Assigns, and for each and every of them, and the said Richard Penn for himself and his Heirs, Executors, Administrators and Assigns, and for each and every of them, Do acknowledge, testify and declare, and do also Covenant, promise, grant and agree, to and with the said Frederick, Lord Baltimore, his Heirs, Executives, Administrators and Assigns, and to and with each and every of them, by these Presents, in Manner and form following, that (is to say,) THAT the Commissioners who had been last so respectively appointed by the said Charles, last Lord Baltimore, on his part, and by the said Thomas Penn and Richard Penn on their part, as is hereinbefore mentioned or recited, did duly proceed in the Execution of such Commissions, and did justly agree upon, fix, and determine the true Spot or Point, or Place for beginning, from whence to Measure the due West Line across the said Peninsula, which was agreed and directed by the said Articles of Agreement and Enrolled Decree. THAT the said Spot or Point, or Place for beginning such due West Line was and is, and shall at all Times forever hereafter be established, held, taken and adjudged to be, where the said Commissioners so agreed upon, fixed and determined the same to be, Namely, at a Point on the Verge of the Main Ocean, being at the distance of one hundred and thirty-nine Perches due East from a stone fixed by the said Commissioners, on the Northern Part of the land called Fenwick's Island, near to four Mulberry Trees there growing, which stone was marked on the side thereof turned to the South with the Arms of the said Charles, last Lord Baltimore, and on the side thereof turned to the North with the Arms of the said Thomas Penn and Richard Penn. THAT the said spot or point, or place of beginning such due West Line was and is, and shall at all Times forever hereafter be esteemed, held, taken, and adjudged to be the Point of the Cape of Hinlopen mentioned in the said Articles of Agreement of the tenth day of May, one thousand seven hundred and thirty-two, at which the East and West Line across the said

Peninsula mentioned in the same Articles, was meant and intended to begin. THAT the said Commissioners and their Surveyors did, in due manner, rightly fix and settle the true Meridian Line, and did then proceed justly, according to the said Articles and Decree, and their respective Commissions, and did measure a true West Line from the said Spot or Point, or Place of beginning at the East End thereof, quite across the said whole Peninsula to the Verge on the Eastern side of the said Bay of Chesopeak, at the West end thereof, in exact Pursuance of and Compliance with the said recited Articles of Agreement and Decree, and the true intent and meaning of the same. THAT the said Commissioners did find and agree that the said West Line measured quite across the said whole Peninsula, to the Length or Extent of sixty-nine Miles and two hundred and ninety-eight Perches. THAT the true Length and Extent of the said West Line was and is, and shall at all times for ever hereafter be esteemed, held, taken, and adjudged to be sixty-nine Miles and two hundred and ninety-eight Perches, neither more nor less. THAT consequently the exact Middle of such West Line, (from whence the other Line is to begin, which is to run up the said Peninsula till it makes a Tangent to the Western Part of the Periphery of the said Part of Circle, at the distance of twelve English Statute Miles horizontally, measured from the Court House in the said Town of Newcastle,) was and is, and shall at all Times for ever hereafter be esteemed, held, taken and adjudged to be at the exact distance of Thirty-four of the said Miles and three hundred and nine perches so measured, West from the aforesaid Spot or Point, or Place of beginning of the said West Line, as the same were so measured as aforesaid. THAT as the said Exact Middle of the said Western Line (as now fixed and forever agreed,) will be a very material Bound or Corner-Mark between the said Parties to these Presents two different Ways, so in addition to, or rather in ascertainment of that part of the said former Agreement, there shall be at the joint Expence of the said respective Proprietarys, Parties Hereto, and their Heirs, one or more large and remarkable stones erected or set up, and continued for ever there, according to the angle made by the said due West Line, and by the said Tangent Line for dividing the said Peninsula; Which stone or stones on the Inward side of the same facing towards the East, and towards the North, shall have the Arms of the said Thomas Penn and Richard Penn graved thereon, and on the outward sides of the same facing towards the West and towards the South, shall have the Arms of the said Frederick, Lord Baltimore, graved thereon. THAT the said Thomas Penn and Richard Penn, and their Heirs and Assigns, shall and will, within the space of thirty days from the date of these Presents, prepare, execute and Issue, under their Hands and Seals, one or more Commissions, appointing seven impartial and proper persons, or any number of them, not less than Three, as Commissioners on their Parts, to mark, run out, settle, fix and determine, all such Parts of the said Circle, Lines, Marks and Boundarys, as are not yet compleated, and to carry the said former Articles of Agreement, Decree and subse-

quent Order, and the Agreements in these Presents contained, into a full and compleat Execution in all respects whatsoever, agreeable to the Plain Intent and true meaning of the same former Articles, Decree and Order, and of these Presents. THAT such Commissioners shall proceed to Execute such Commissions with all fairness and Dispatch; THAT neither the said Thomas Penn, his Heirs, Executors or Administrators, nor the said Richard Penn, his Heirs, Executors or Administrators, nor any of them, shall at any Time or Times hereafter be consenting to, aiding or assisting in, or incourage or promote in any manner whatsoever, or lend his or their or any of their name or names towards the Commencing, Prosecuting or defending any suit or suits, cause or causes whatsoever, to be Commenced, Prosecuted, or defended in any Court of Law or Equity whatsoever, by any of the Tenants of the said Thomas Penn and Richard Penn, or either of them, or by any of their or either of their Grantees, or the Grantees of their or any of their Ancestors, whereby the Right of the said Frederick, Lord Baltimore, his Heirs and Assigns, to the said Province of Maryland, in America, with all and singular the Rights, Royalties, Members and Appurtenances thereof, bounded and to be bounded according to the Extent, Bounds and Limits which were agreed by the said Articles of the tenth day of May one thousand seven hundred and thirty-two, and decreed and ordered in and by the said inrolled Decree of the Court of Chancery, and the said subsequent Order of the said Court, of the twenty-ninth day of May one thousand seven hundred and fifty-one, and according to the true intent and meaning of these Presents, may be drawn in Question or controverted in any manner whatsoever. THAT the said Thomas Penn and Richard Penn, and their Heirs and Assigns, shall and will on his and their Parts, at all Times, on Request, and at the Costs and Charges of the said Frederick, Lord Baltimore, his Heirs and Assigns, make, do, Perform and Execute any further Matter and Thing (exclusive of the Acts hereby stipulated to be Performed at a joint Expence,) which shall any way be necessary to be done for rendering the said former Articles of Agreement, Decree and subsequent Order, and these Presents, most Perfect, valid, sure and effectual, at all Times forever hereafter. THAT the said Thomas Penn and Richard Penn shall and will, within Three Days after the said Frederick, Lord Baltimore, shall have acknowledged the due Execution of these Presents in such manner as he hath hereinbefore agreed to do, cause these Presents to be Enrolled in his Majesty's high Court of Chancery. THAT the said Thomas Penn and Richard Penn shall and will, within Thirty days next after they can or may obtain an Office Copy of such Answer as aforesaid, which the said Frederick, Lord Baltimore, hath hereinbefore agreed to put in as aforesaid to the said Bill, to be filed for the Purposes aforesaid, make proper application to the said Court of Chancery to have the said Cause set down for hearing, by Consent upon Bill and Answer, at some early Day, so soon as the said Court shall think fit to appoint for that purpose, and shall and will previously give notice of such intended application, either unto the said Frederick, Lord Bal-



timore, or unto his Clerk in Court, or Solicitor, in Order to have a full and proper Consent thereto, on the Part of the said Frederick, Lord Baltimore. THAT the said Thomas Penn and Richard Penn shall and will set down the said cause to be heard at such Time as shall, on such Application be appointed for the same, and shall and will by their Council, duly attend the hearing of the same. THAT on the Hearing of the said Cause, the said Thomas Penn and Richard Penn shall and will by their Council, consent and pray that all Partys may have Liberty to resort to the Court from Time to Time, for further Directions, in case any Difficulty or Doubt should happen to arise in the carrying the said former Decree and subsequent Order, or any Decree or Order to be hereafter made in the said Cause into Compleat Execution, and shall not Pray any Costs in the said Cause to the time of the hearing, and shall consent that the subsequent costs be reserved. THAT neither at the Time of Hearing the said Cause upon such Answer, Consent and Submissions as aforesaid, or at any other subsequent Time, shall the said Thomas Penn or Richard Penn, or their Heirs or Assigns, or any of their Counsel or Agents, demand or Pray any Costs to be Decreed or Ordered to him or them, in Respect of the present suit now depending. But the said present suit and all proceedings therein shall be forthwith dismissed, upon a proper Application to be forthwith made by the said Frederick, Lord Baltimore, to the Court of Chancery, as for want of Prosecution. THAT the said Thomas Penn and Richard Penn, or their Heirs or Assigns, shall not at any Time or in any Manner whatsoever, oppose such Decree as shall be so made upon such consent as aforesaid, in the said Cause to be commenced by the said Thomas Penn and Richard Penn, Pursuant to the true intent and meaning of these Presents hereinbefore declared or expressed, or the signing and Enrolling of such Decree. THAT in case the said Frederick, Lord Baltimore, or his Heirs or Assigns, shall at any Time hereafter (whether before or after the said Cause in Chancery shall be heard,) be desirous to lay this Present Indenture and the Matters hereinbefore mentioned, or any of them, by an humble Petition before his Majesty, his Heirs or Successors, in his or their Privy Council, and humbly to Pray the Royal Allowance, Ratification and confirmation of the said former Articles of Agreement, and the said Enrolled Decree and subsequent Order of the said Court of Chancery, and of these Presents, to be forever established as between the respective Proprietarys of the said Provinces and Countys, for the Peace and Welfare of the same, and of his Majesty's subjects in those Parts. The said Thomas Penn and Richard Penn, and their Heirs and Assigns, shall forthwith upon Request, join in and become Co-Petitioners therein, or otherwise with their own Hands sign a full consent to such Petition at the foot thereof, and shall and will by all other fitting and Proper Means, give their full consent and agreement to the same, either in their own proper Persons, or by such other means as shall be most valid and effectual. AND for the Consideration aforesaid, the said Thomas Penn for himself and his Heirs, Executors, Administrators and Assigns, and for each

and every of them, And the said Richard Penn for himself and his Heirs, Executors, Administrators and Assigns, and for each and every of them, Do and each of them DOTH hereby further Covenant, Promise and Agree to and with the said Frederick, Lord Baltimore, his Heirs, Executors and Administrators, and every of them, That they the said Thomas Penn and Richard Penn, and each of them, their and each of their Heirs, Executors and Administrators, and also some or one of the Executors of the last Will and Testament of the said John Penn, deceased, shall and will, on the day after the date and Execution of these Presents, upon Request to be to them made in that Behalf, and for the Consideration of the sum of one shilling only, to be to them Paid, but at the Costs in the Law of the said Frederick, Lord Baltimore, his Heirs, Executors or Administrators, Give and Execute unto him or them, and unto the Executors of the said Charles, last Lord Baltimore, and also unto the Executors of the said Samuel Ogle and John Sharpe, two of the said Executors, who are since dead, and unto all and every other Person or Persons claiming or to claim, by, from, or under the said Charles, Lord Baltimore, and Frederick, Lord Baltimore, or either of them, and also unto all and every the Estates, Real and Personal, of the said Charles, Lord Baltimore, a full Receipt, Acquittance, Discharge and Release, for all and every such costs as by te said former Decree and subsequent Order were Decreed to be Paid by the said Charles, last Lord Baltimore, or were reserved for the future consideration of the said Court of Chancery, and for all Costs and Damages which they the said Thomas Penn and Richard Penn, and the Executors of the said John Penn can or may at any Time hereafter, have or claim against the said Frederick, Lord Baltimore, or the Executors of the said Charles, Lord Baltimore, or any other the Person or Persons aforesaid, by virtue of the said Agreement of the tenth day of May, one thousand seven hundred and thirty-two, Decree and Order and other the Proceedings aforesaid, any or either of them, or otherwise howsoever to the day of the date of these Presents. AND WHEREAS, the said Frederick, Lord Baltimore, and his Ancestors and Predecessors, by him or themselves, or by some of his or their Tenants, Grantees or Agents, under his or their Right and Title, have been from Time to Time, and now are in the Actual Possession of all the Lands, Tenements and Hereditaments hereinafter mentioned to be hereby released by the said Thomas Penn and Richard Penn unto the said Frederick, Lord Baltimore, and his Heirs. NOW THEREFORE THIS INDENTURE MOREOVER WITNESSETH, That for the Ends and Purposes, and from the motives aforesaid, and in Order to render these Presents the most valid that may Possibly be, and for and in consideration of five shillings of lawful money of Great Britain, to the said Thomas Penn and Richard Penn in hand Paid by the said Frederick, Lord Baltimore, at or before the sealing and delivery of these Presents, the Receipt whereof is hereby acknowledged, THEY, the said Thomas Penn and Richard Penn, for themselves and their Heirs, HAVE released, renounced, and quitted claim, and by these Presents Do fully and

absolutely Release, renounce, and quit claim unto the said Frederick, Lord Baltimore, and to his Heirs and Assigns forever, ALL that the said Province of Maryland, in America, with all and singular the Rights, Royalties, Members and Appurtenances thereof, bounded and to be bounded according to the Extent, Bounds and Limits, which were agreed by the said Articles of Agreement of the tenth day of May one thousand seven hundred and thirty-two, and decreed and ordered in and by the said Enrolled Decree of the said Court of Chancery, and the said subsequent Order of the said Court, of the twenty-ninth day of March, one thousand seven hundred and fifty-one, and according to the true intent and meaning of these Presents, and the Reversion and Reversions, Remainder and Remainders, yearly and other Rents, Issues and Profits, and arrears of Rents, Issues and Profits of all and singular the said Province of Maryland, and all the Estate, Right, Title, Interest, Property, Power, Prerogative, Claim, Demand and Pretensions whatsoever of the said Thomas Penn and Richard Penn, and their Heirs, of, in, and to the same, and every or any Part or Parts of the same; PROVIDED ALWAYS, and it is hereby declared and agreed by and between the said Partys to these Presents, and it is the true intent and meaning of them and of these Presents, That neither these Presents, nor any Clause, Article, Matter or Thing whatsoever therein contained, shall extend or be deemed, construed, or taken to extend to the Right of any Grantee or Grantees, and those claiming under them, to any the Farms, Lands, Tenements, Hereditaments now in the Actual Possession or Occupation of all, every, or any the Tenants or Occupiers of the said Province, Lands, Hereditaments and Premises hereby released, or intended or agreed to be released as aforesaid, Which have been at any Time and in any Manner heretofore granted, by or under the authority of the Proprietarys of the said Province of Pensilvania for the Time being; But that it shall and may be lawful to and for all and every such Tenants and Occupiers of the same Premises and every Part thereof, their and every of their Heirs, Executors, Administrators and Assigns, from Time to Time, and at all Times hereafter, to hold and enjoy their said Farms, Lands, Tenements and Hereditaments and every of them, and every Part thereof, for and during all and every such their several and respective Estates, Terms and Interests in the same, and every of them, and every part thereof, subject, nevertheless, to and by, and under all and every the same Quit-Rents, Reservations and Services to be from henceforth paid, rendered and Performed to the Proprietary of the said Province of Maryland for the Time being, as they the said Tenants and Occupiers, and every of them, were lyable at the time of and immediately before the Execution of these Presents to have paid, rendered and Performed to the Proprietarys of the said Province of Pensilvania, any thing hereinbefore contained to the contrary in any wise notwithstanding. PROVIDED ALSO, and it is hereby further declared and agreed, by and between the said Parties to these Presents, and it is the true intent and meaning of them, and of these Presents, That neither these Presents nor any Clause,

Article, Matter or Thing whatsoever therein contained, shall extend, or be deemed, construed, or taken to extend to the Right of any Grantee or Grantees, or those claiming under them, to any the Farms, Lands, Tenements or Hereditaments, which are situate, lying and being on the East side of the River Susquehannah, and within the space or Distance of One Quarter of a Mile more South than the East and West Line mentioned in the sixth Article of the said Articles of Agreement, of the tenth day of May, one thousand seven hundred and thirty-two, and which have been at any Time and in any Manner heretofore granted by or under the Authority of the Proprietarys of the said Province of Pensilvania for the Time being, and are now in the actual Possession or Occupation of all, every, or any the Tenants or Occupiers of the said Province, Lands, Hereditaments and Premises. But that it shall and may be lawful to and for all and every such Tenants and Occupiers of the said last mentioned Lands and Premises, and every Part thereof, their and every of their Heirs, Executors, Administrators and Assigns, from Time to Time, and at all Times hereafter, to hold and enjoy their said Farms, Lands, Tenements, Hereditaments, and every of them, and every Part thereof, for and during all and every their several and respective Estates, Terms and Interests in the same, and every of them, and every part thereof, subject, nevertheless, to and by, and under all and every the same Quit-Rents, Reservations and Services, to be from henceforth paid, rendered and Performed to the Proprietary of the said Province of Maryland for the Time being, as they the said Tenants and Occupiers, and every of them, were liable at the Time of and immediately before the Execution of these presents to have Paid, rendered and Performed to the Proprietarys of the said Province of Pensilvania, any Things hereinbefore contained to the contrary in any wise notwithstanding. IN WITNESS whereof, the said Parties before named to this Present Indenture, their Hands and Seals have hereunto set, the Day and Year first above written. F.[L.S.] BALTIMORE, THO.PENN,[L.S.]

RICH'D [L.S.] PENN.

(ACKNOWLEDGEMENT ON THE MARGIN.), Acknowledged by the Right Honourable Frederick, Lord Baron, of Baltimore, and Thomas Penn and Richard Penn, Esquires, the 4th day of July, 1760, before T. Harris.

(Attestation Endorsed)

Sealed and Delivered by all the Parties within named, (being first duly stampd,) In the Presence of

STIRLING, JOHN LEWIS,  
HEN. WILMOT,  
HUGH HAMERSLEY,  
JOHN'A LANCASTER.

Enrollment Endorsed.

"Enrolled in his Majesties High Court of Chancery, another Part of this Indenture, the fourth day of July, in the Year of our Lord, 1760, being first duly stampd, according to the Tenor of the Statue made in the Sixth year of the Reign of their late matyes King Wm. and Queen Mary.

BY HUMPH. HACKSHAW"





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